Determinants and Consequences of Earnings Disclosure Readability

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ABSTRACT

This research examines whether changes in the regulatory environment (Plain English Guidelines, Reg. FD and SOX), management pessimism, and meeting/beating or missing analyst forecasts have had an impact on earnings disclosure readability over the 1997-2007 timeframe and whether firm managers are able to make negative firm financial information less transparent to the market by making negative earnings disclosures less readable. The idea that management may attempt to reduce the impact of bad news by making it more costly to analyze is not new. However, studying the qualitative aspects of the unaudited earnings disclosures is a unique setting and extends previous work on annual report readability. This study finds that the Plain English Guidelines, Reg. FD and SOX had differential impacts on earnings disclosure readability. Additionally, it finds that earnings disclosure readability decreases as firm earnings decrease. Moreover, this study demonstrates that institutional investors contribute to earnings disclosure readability and may serve as monitors of management in this regard. Finally, firms that beat analyst forecasts have more readable earnings disclosures. This study not only contributes to the body of academic literature, but also informs regulators regarding their ability to induce firm management to write more informative earnings disclosures.

Dedication

I dedicate this dissertation to my children: Margaret, Jack and Maribel.

Margaret, you were the change agent that set me on the path of this amazing journey. I appreciate all of the hours you spent "studying Econometrics" with me. Your desire to learn was, and remains, an inspiration.

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1. INTRODUCTION

Firm disclosures are a critical component of an efficient capital market (Healy and Palepu (2001)). The Securities and Exchange Commission (SEC) and Congress have demonstrated their commitment to making firm financial information more accessible to all investors and increasing investor confidence through the incremental enactment of the Plain English Guidelines (1998), Regulation Fair Disclosure (2000) (Reg. FD) and the Sarbanes-Oxley act (2002). Bloomfield's (2002) "Incomplete Revelation Hypothesis" states that markets react less completely to information that is more difficult to process and firm managers can lessen the market impact of negative news by making it more complex. I investigate whether managers, through the readability of firm earnings disclosures, can lessen the market impact of poor firm performance. By investigating the readability of firm earnings disclosures over the 1997-2007 timeframe, I individually examine the impact of the Plain English Guidelines, Reg. FD and SOX on the SEC's ability to induce firm management to make firm earnings disclosures more informative.

The extant literature indicates that managers strategically use the amount and timing of disclosures opportunistically. Schrand and Walther (2000) show that firm managers describe firm performance relative to strategically chosen benchmarks in an effort to paint firm performance in a more favorable manner. Miller (2002) shows that firms strategically include either long or short-term earnings forecasts in their disclosures depending on whether they are in a period of earning decline or increases. Several early disclosure studies (Patell 1976, Penman 1980 and Lev and Penman 1990) explore qualitative disclosure characteristics and show that, in general, annual forecasts are used for positive news while short-term forecasts and preannouncements are used for negative news. While the existing disclosure literature has explored differences in disclosure content and timing, it has yet to develop a replicable metric for

comparing the qualitative portions of disclosures. *My current study contributes to the corporate disclosure literature by showing that the readability of earnings disclosures is a measureable and replicable technique by which to compare the qualitative textual content of earnings disclosures and its impact on the market and investors.*

Readability, as measured by the Fog index from the computational linguistics literature, is an easily computed, replicable standard by which the firm disclosures can be measured for clarity. There are a few early studies that explored readability on a small sample basis (Pashalian and Crissy 1952, Soper and Dolphin 1964, Barnett and Leoffler 1979). These studies concluded that annual reports are very technical reading, but failed to show any consistent trend of increasing or decreasing readability over the years. Three recent studies, Li (2008) and Loughran and McDonald (2008 & 2011), also explore the readability of firm annual reports. Li (2008) uses the Fog index and finds that firms with lower earnings have less readable annual reports and that readability of firm annual reports is related to earnings persistence. Li (2008) documents a decreasing trend in annual report readability. Loughran and McDonald (2008) measure readability based on a metric they created that measures the "plain English" content of annual reports. Their study finds that the plain English content of annual reports has improved and that the market responds to more clearly written annual reports. In their 2011 study, Loughran and McDonald use textual analysis to investigate the tone of annual reports and examine the impact of tone on trading volume and return volatility. Annual reports are developed and written through a process of auditor and management deliberation. Consequently, the word choice and sentence structure of annual reports can be considered the result of multiple constituents and not simply the result of management's intention to supply information to the marketplace. By investigating the determinants of quarterly earnings disclosure readability and

the impact of earnings disclosure readability on abnormal returns and abnormal trading volume, my current research extends the readability groundwork laid by Li (2008) and Loughran and McDonald (2008 & 2011). Quarterly earnings disclosures provide a much better environment in which to test whether firm management strategically uses complex language in an attempt to make adverse information less transparent to investors. Quarterly earnings disclosure press releases typically are free of auditor influence as they are written by firm disclosure committees that usually consist of the Investment Relations Officer, the CFO and CEO. Thus, this setting more directly captures managements' intentions with respect to disclosure language.

The impact of Reg. FD on the nature and amount of firm disclosure is a topic of great interest in the accounting literature. Heflin et al. (2003) measure the information gap by the size of the abnormal stock price changes surrounding earnings announcements. They find that the gap actually decreased in the post Reg. FD market. Through a matched pair sample of pre and post Reg. FD earnings disclosures, Bailey et al. (2003) find no decrease in accuracy of current quarterly earnings forecasts, but do find an increase in dispersion. Straser (2002) examines voluntary corporate disclosures during the sixty-eight days before and after the institution of Reg. FD. Straser hypothesizes that if companies responded to Reg. FD by providing information of a higher quality there should be lower information asymmetry after the regulation took effect. The study concludes that over this limited time period companies issue more disclosures and provide more public information, but that the quality of information actually decreases. The question of whether the disclosures are imparting higher quality information into the market place remains largely unanswered. Exploring the readability of earnings disclosures in the pre and post-Reg. FD environment is one method of contributing to the discussion of whether the SEC was successful in improving not only the accessibility of financial information, but also the

quality of financial information that is available to investors. The value of this discussion cannot be overstated since one of the goals of Reg. FD was to provide a "level playing field" for all investors.

My current research also contributes to the recent accounting and finance literature that investigates the market impact of pessimism in the media, the role institutional investors play in the market place and their ability or inability to influence firm management, as well as the phenomena surrounding firms that meet and or beat analyst estimates. Tetlock (2007), Tetlock et.al (2008) and Engelberg (2008) explore the impact of pessimism in news articles. Collectively, these studies have found that the media can impact investor beliefs and affect stock price reactions. *My research expands this pessimism research stream by showing that management pessimism detracts from the readability of firm earnings disclosures in both level models and quarter-to-quarter change models.* Plumlee (2003) investigated the ability of institutional investors to use more complex information while Parthiban et al. (1998) investigate institutional investors' ability to affect the compensation structure of firm CEO's. *My current research contributes to the investigation of the impact of institutional investors and finds that institutional investors actually have a positive impact on earnings disclosure readability. My research additionally documents an unexpected finding surrounding the relationship between meeting or beating analysts' forecasts and earnings disclosure readability.*

Along with afore mentioned contributions m*y research extends the existing literature in the following ways. Readability is a replicable method by which the qualitative textual characteristics of firm earnings disclosures can be evaluated. Since firm managers have a choice in writing style they can strategically disclose to the market by creating more or less readable earnings disclosures. I extend the existing body of readability research by exploring the*

readability of a less-scripted form of firm communication: quarterly earnings disclosures. I find that firm's earnings, management pessimism, whether the firm meets or beats analyst forecast and institutional ownership are all significant determinants of earnings disclosure readability and specifically that firms with lower earnings have less readable disclosures. Additionally, by constructing a model that investigates the relationship between the quarter-to-quarter change in earnings and the associated change in earnings disclosure readability, I demonstrate that if firms experience a negative change in earnings their earnings disclosures become less readable. Since this research uses a large sample executed over a substantial time period, 1997-2007, that encompasses the most recent major changes in our regulatory environment as well as temporal analysis, the results of this study can aid regulators in determining the impact of regulatory changes on the marketplace. My results show a trend of generally decreasing earnings disclosures that was only temporarily halted by the promulgation of the SEC's Plain English Guidelines. Specifically, this study shows that the SEC has been generally unsuccessful in creating more accessible and readable quarterly earnings disclosures. This is an important finding since the SEC has articulated the importance of high quality firm disclosures that are equally accessible to all users of financial statements.

The remainder of this study is organized as follows. In Chapter 2, I present the literature review and develop my hypotheses. In Chapter 3, I describe the models, methodology and data. Chapter 4 contains a discussion of my results and I conclude with Chapter 5, in which I discuss the contributions and future research.

2. RELATED LITERATURE AND HYPOTHESES DEVELOPMENT

2.1 The Changing Regulatory Environment

The Securities and Exchange Commission (SEC) has promulgated significant guidance impacting the characteristics of firm disclosures. In October 1998, the SEC issued new disclosure guidelines encouraging the use of plain English in the drafting and formatting of all prospectuses in registered public offerings by domestic and foreign issuers. The SEC created the "Plain English Handbook" to show firm managers well-established techniques for writing clearer and more informative disclosure documents. The plain English guidelines only required the use of plain English in prospectus filings, but the SEC goes on to encourage firms to use the plain English guidelines established in the handbook for all firm disclosures.[1] Arthur Levitt, SEC Chairman at the time, writes:

> "Investors need to read and understand disclosure documents to benefit fully from the protections offered by our federal securities laws. Because many investors are neither lawyers, accountants, nor investment bankers, we need to start writing disclosure documents in language investors can understand: plain English."

The plain English guidelines provide clear direction that the SEC believes management should provide disclosures that can be interpreted by sophisticated and retail investors alike.

Another change in the regulatory environment impacting disclosure requirements was enacted by the SEC on October 23, 2000. The implementation of Regulation Fair Disclosure (Reg. FD) required U.S. public companies that intentionally disclose material, nonpublic information to a select group to also disclose this information simultaneously to the public (SEC, 2000). The goal of Reg. FD was to eliminate selective disclosure to a few privileged interested parties, thereby creating a more even playing field for all investors. Thomas P. Moore, CFA offers a sell-side analyst's perspective in the January 2001 edition of *Investor Relations*

[1] See page 4 of *A Plain English Handbook (1998)*

Quarterly. He believes that post Reg. FD an analyst's task could temporarily become more difficult as companies decide what information is material and what is not. Additionally, he believes that companies will need some time to decide how to best deliver this information. Based on his comments it would seem that firm disclosures could become less readable and lengthier in the period immediately following the implementation of Reg. FD. Alternately, firm IROs and CEOs may determine that publicly available firm disclosures are now the best vehicle to deliver firm information to the market place and, as a result, make an effort to ensure that their disclosures immediately following Reg. FD are more clearly written.

The regulatory environment was further impacted by the passing of the Sarbanes Oxley Act of 2002 (SOX). The main goal of SOX was to improve the quality of financial reporting and to increase investor confidence. Two provisions of SOX require new disclosures about the effectiveness of firms' internal control systems. Section 302 of SOX requires that the chief executive officers and chief financial officers disclose quarterly evaluations of the design and effectiveness of internal controls. Section 404 of SOX requires an annual audit of management's evaluation of internal controls and the effectiveness of those internal controls. SOX defines three types of internal control weaknesses: control deficiencies, significant deficiencies, and material weaknesses. Prior to SOX, companies were only required to report internal control weaknesses if they changed auditors. SOX sections 302 and 404 require disclosure of these events, but do not require these events to be disclosed in any particular form of disclosure. As a result, many firms are making these disclosures in conjunction with their earnings release. To the extent that firms are using earnings disclosures to discuss the results of internal controls evaluations, firm earnings disclosures may become more readable as firms will want to appear more forthcoming in the wake of the accounting scandals that brought about SOX. However, as

firms add yet another area of discussion to their earnings disclosures, lengthier disclosures in the post-SOX environment could be expected.

As recent evidence that the SEC is concerned about the readability of corporate disclosures, the Securities and Exchange Commission Office of Investor Education and Advocacy (OIEA) commissioned Abt SRBI, a full service global strategy and research organization specializing in public policy and opinion surveys, to conduct a national investment literacy survey in July 2008. The goal of the "Mandatory Disclosure Documents Telephone Survey" was to learn from investors whether key documents: annual reports, proxy statements, mutual fund prospectuses, disclosures and shareholder reports are written in plain English as defined by the initiative. Based on this survey, over half of the investors surveyed stated that the reports were either too complicated to understand, or too long and wordy.

Regulators have articulated the need for clearer firm disclosures and in our literature there have been earlier studies that specifically investigate whether annual reports have become more or less difficult to read (Soper and Dolphin 1964, Barnett and Leoffler 1979). Barnett and Leoffler compare the readability of the financial statement notes of the year 1975 to those of 1969. They find that the readability of financial statement notes is at "an extreme" level of difficulty and that the 1975 notes are significantly less readable than those of 1969. Soper and Dolphin (1964) update an earlier study by Pashalian and Crissy (1952). Soper and Dolphin test the same sample used by Pashalian and Crissy, corporate annual reports of corporations listed as members of the Corporate Billion Dollar Club on June 11, 1949, and compare the readability of their 1964 annual reports to the readability of the same sample of firms tested in the 1952 study. Soper and Dolphin find that annual reports should be classified as very difficult technical reading, but do not find a significant difference in the readability from 1952 to 1964. These

studies provide limited relevant information regarding the readability of firm disclosures as they explore very limited samples in time frames prior to the issuing of the SEC plain English guidelines, Reg. FD and SOX.

Li (2008) examines a large sample of firms over the 1993-2003 timeframe and finds that annual reports in his sample have a mean Fog index score of 19.4 which is listed as "unreadable" according to the standard interpretation of the Fog index used in the computational linguistics literature. As a comparison, he downloads all of the 2005 editorials from the *Wall Street Journal* and finds the mean Fog index for these editorials to be 15.2; 14-18 is classified as "difficult". A Fog index score of 12-14 is classified as ideal, 10-12 is classified as acceptable, and 8-10 is classified as childish. Li (2008) effectively demonstrates that the readability of annual reports decreased over his sample timeframe. This large sample evidence is compelling; however, he does not extend his results to the readability of less-scripted forms of firm disclosure such as quarterly earnings disclosures.

In our literature there has been very little research into the impact of the plain English guidelines. Loughran and McDonald (2008) explore the impact of the SEC's plain English guidelines on the readability of a sample of 56,079 10-Ks from 1994-2006. Loughran and McDonald develop a unique measure of readability based on the guidelines published in the "Plain English Handbook". They created a standardized statistic which combines word length, word commonality, and a series of writing components identified by the SEC in the "Plain English Handbook". Overall, they find that the readability of 10-ks generally improves over their sample time frame. The results of this research document the SEC's ability to impact disclosure presentation without directly legislating change. Their results on readability generally contradict the results of Li (2008).

Miller (2008) also studies the impact of firm annual report readability and length. His study is based on a sample of 10-k's from 1994 to 2006. Variations in annual report readability and length across time are not the focus of his study, however, he does note that mean Fog index of his sample is 19.5 and readability generally decreases over the sample time period when measured by the Fog index. In contrast to Loughran and McDonald (2008), Miller (2008) finds no apparent change in readability based on the plain English measure used in his study.

The extant research into the SEC's ability to affect improvements in the readability of firm disclosures is very limited and yields mixed results that relate only to changes in the readability of annual reports. Based on the mixed results of the previous studies and the prominence of the SEC's continuing efforts encouraging firms to communicate more clearly, my research predicts that the readability of earnings disclosures has increased over the 1997-2007 timeframe. This leads to the following hypotheses:

H1a: The readability of earnings disclosures improved following the promulgation of the Plain English Guidelines in October 1998.

H1b: The readability of earnings disclosures improved following the implementation of Regulation FD on October 23, 2000.

H1c: The readability of earnings disclosures improved following the implementation of SOX on November 15, 2004.

2.2 Impact of Earnings and Pessimism

Bloomfield (2002) presents the "Incomplete Revelation Hypothesis" (IRH) which advances a compelling argument that management has incentives to release less readable negative firm information. Following the logic in Bloomfield (2002), the IRH predicts under reaction to negative news that has high collection opportunity costs. Additionally, Bloomfield states that managers seek to boost stock prices by hiding bad news in the footnotes. Bloomfield asserts that the IRH goes beyond the efficient market hypothesis by predicting that prices react more strongly to statistics that are more easily extracted from public data. Bloomfield's (2002) hypothesis is particularly interesting since he connects strategic use of the qualitative aspects of financial statements with management's desire to lessen the market impact of negative firm news. There are two potential sources of negative information within firm earnings disclosures: negative quantitative earnings data and negative tone (pessimism). A decreased level of readability in firm disclosures that contain negative quantitative earnings or negative tone (pessimism) follows this logic directly since the incomplete revelation hypothesis implies that managers can reduce the market impact of bad news by making bad news more costly to analyze.

Although there is a large body of existing literature on the amount and types of disclosure (see Healy and Palepu (2001)), there is a relatively small body of literature that attempts to investigate management's use of the qualitative characteristics of disclosures. Jones and Shoemaker (1994) provide an early review of the literature exploring the determinants of disclosure linguistic features. Smith and Smith (1971) explore the impact of external auditors on the restrictive readability of the annual financial statements footnotes of Fortune 50 companies. Healy (1977) explores annual report footnote readability for New Zealand firms and Lebar (1982) puts forth a study comparing the differences in topics and information contained in the

annual reports of 10 NYSE firms in 1978. Additionally, the impact of firm profitability on the readability of annual reports is explored in several earlier studies such as Courtis (1986), Baker and Kare (1992) and Subramanian et al. (1993). These studies lay the foundation for my current investigation. However, they all explore small samples of firm annual reports and were all completed in a significantly different regulatory environment.

Bloomfield is not the only author to suggest that management strategically discloses information. Miller (2002) finds that firms experiencing earnings increases have more long-term forecasts included in their disclosures while firms that are experiencing a period of earnings decline focus their disclosure on short-term good news. Miller (2002) provides some interesting information regarding specific qualitative characteristics of firm disclosures and management's ability and willingness to strategically include or exclude long term forecasts in firm earnings disclosures. However, his main results are for a very small sample, 80 firms, and do not relate to the overall textual characteristics of firm earnings disclosures.

The most prominent recent study regarding textual characteristics and readability is Li (2008). Li examines a large sample of firms over the 1993-2003 timeframe. Li (2008) finds that firms with higher earnings have more readable annual reports, and that the positive earnings of firms with less readable annual reports are less persistent. Li's study goes on to examine other linguistic features of annual reports. In particular, he finds that for profitable firms, a higher frequency of causation words (such as ''because'') in the Management Discussion and Analysis (MD&A) section is associated with less persistent earnings and a higher occurrence of positive emotion words (relative to negative emotion words) is associated with more persistent earnings; and a higher frequency of future tense verbs (relative to past/present tense verbs) is indicative of a lower earnings persistence. The evidence in Li (2008) suggests a correlation between the

linguistic features of annual reports and firm performance. Additionally, it suggests that managers may be opportunistically structuring the annual reports to make adverse information less transparent to investors. Li extends the strategic reporting literature (Schrand and Walther, 2000) by showing that disclosure readability may be used strategically by managers. To the extent that more complicated annual reports increase the information-processing cost for investors and as a result possess a lower quality of disclosure, his paper provides a new measure of disclosure quality that can be studied in a large sample.

Although Li's (2008) results are compelling, they still only examine the most scripted form of firm disclosure. As Bloomfield (2008) explains in his discussion of Li (2008), annual reports are not a true representation of management's desire to impart or conceal information. Firm annual reports are written as a result of committee deliberations and the language and sentence structure can be only partially attributed to the firm management. My research provides a significant contribution beyond the previous studies since my sample contains a less-scripted form of firm communication that is more representative of managements' attitudes and sentiment: earnings disclosures. Based upon prior research, I expect that earnings disclosure readability will be positively related to higher earnings, which leads to my second hypothesis:

H2: Firms with higher earnings will have more readable earnings disclosures than firms with lower earnings.

Tetlock (2007) examines the impact of media tone by examining the market reaction to the standardized fraction of negative words in the *Wall Street Journal* (WSJ) column "Abreast of the Market". Tetlock (2007) found that negative words (pessimism) convey negative information about firm earnings beyond analyst forecasts and historical accounting data. Tetlock et al. (2008) continues the investigation of the market impact of pessimism in media news

articles by analyzing the use of negative words in all WSJ articles as well as all *Dow Jones News Service* (DJNS) stories about S&P 500 companies from 1980 to 2004 and finds that the negative words in news stories related to firm fundamentals predict future earnings and returns more effectively than other news stories. Engelberg (2008) examines the headline and lead paragraph of *Dow Jones News Service* articles related to earnings releases.[2] Using a methodology similar to Tetlock (2007) and Tetlock et al. (2008), Engelberg (2008) finds that quantitative information is more easily processed than soft or qualitative information. The aforementioned studies all found that pessimism, measured by the fraction of negative words in an article, provided negative information regarding firm performance. Based on these results, my research predicts that earnings disclosures with greater pessimism will be less readable. This leads to my third hypothesis:

> ***H3: Firms with higher levels of pessimism will have less readable earnings disclosures than firms with lower levels of pessimism.***

2.3 Impact of Meeting, Beating or Missing Analyst Forecasts

The impact of meeting, beating or missing analyst estimates is well documented in the accounting literature (Burgstahler and Dichev 1997, Degeorge et al. 1999 and Bartov et al. 2002). Typically, if earnings beat expectations, share prices increase. Similarly, if earnings are lower than the market's expectation, stock prices fall. Skinner and Sloan (2002) find that since the market reaction to negative earnings surprises is large there is a significant cost to missing analysts' expectations. Bartov et al. (2002) states that evidence suggests that firm managers are active participants in meeting or beating analysts' expectations. They explore the extent to

[2] The verbiage found in the headline and lead paragraph of DJNS articles is not a reproduction of the related earnings disclosure press release based on a manual comparison of a sample of the articles analyzed by Engelberg (2008) with the related firm earnings disclosures analyzed in my current proposal.

which firm managers intentionally manage analysts' expectations to avoid negative earnings surprises or produce a positive earnings surprise. Degeorge et al. (1999) and Burgstahler and Eames (2006) found that if managers are unable to report profits that meet or beat analyst forecasts, they manipulate accruals in order to report small positive earnings surprises and to avoid small negative earnings surprise.

Schrand and Walther (2000) contribute to the strategic disclosure literature by exploring the impact of managers highlighting and discussing the most favorable changes in current earnings. In their study, Schrand and Walther find that there is strong evidence of strategic reporting by firm managers and that the market is misled by this behavior. In their study, they find that firm managers strategically select the prior-period benchmark used for comparison to current earnings amounts. This allows managers the ability to highlight the most favorable change in net income for the comparable quarter of the previous year. They find that managers are successful in preventing a negative earnings surprise by separately announcing a prior-period non-recurring gain or by deciding not to separately disclose a prior period non-recurring loss.

In a more recent study, Brown and Caylor (2005) show that firm managers are more concerned with avoiding negative earnings surprises than they are with avoiding earnings decreases or losses. Additionally, survey research by Graham et al. (2005) punctuates managements' belief in the importance of meeting or beating analysts' estimates. Their research indicates that CFOs believe there is a severe market penalty for missing analyst estimates. CFOs claim that missing analyst expectations raises concerns of deeper problems and causes investors to doubt the firm's future performance prospects (Graham et al. 2005). Graham et al. state that these concerns cause managers to devote additional time and resources to convey the firm's financial condition. Frankel et al. (2010) compare the changes in conference call length and tone

that occur based on whether firms meet, beat or miss consensus analyst estimates. They find that conference calls increase in length and the tone gets more negative when firms miss analyst estimates.

Firm managements' desire to lessen the market impact of missing analysts' estimates is consistent with the results of Graham et al. (2005), Bartov et al. (2002) and Frankel et al. (2010). If managers of firms are willing to manipulate accruals in order to avoid missing analysts' estimates (Degeorge et al. (1999) and Burgstahler and Eames (2006)) then it follows that managers of firms would also be willing to write less readable documents in an attempt to make negative firm information less transparent. Alternatively, firms that meet or beat analyst expectations have an incentive to ensure that readers of earnings disclosures are aware of their firm's performance. As a result, my research predicts the earnings disclosures of firms that meet or beat analyst expectations will be more readable. This leads to my fourth hypothesis:

> ***H4: Firms that meet/beat analyst forecasts will have more readable earnings disclosures than firms that miss analyst forecasts.***

2.4 Earnings Disclosure Readability and Stock Price Reaction

The link between firm earnings and stock returns is well documented in the accounting literature (Ball and Brown, 1968; Banz, 1981; Bernard and Thomas, 1989; and Nichols and Wahlen, 2004). In order for earnings to impact stock prices, shareholders must receive information regarding current and expected future profitability from financial reporting. In their review of classic accounting literature, Nichols and Wahlen (2004) find that results not only suggest earnings numbers communicate new information to the capital markets but that stock prices appear to incorporate this new information within a (0,+1) window around the earnings release date.

Many accounting studies have investigated whether the amount and timing of earnings disclosures provide shareholders with information beyond the accounting numbers. Disclosure studies such as Patell (1976), Penman (1980) and Lev and Penman (1990) examine the frequency of disclosure and suggest that firms tend to disclose more frequently when they are experiencing favorable earnings and earnings forecasts are on average, associated with positive returns. Ajinkya and Gift (1984) and McNichols (1989) indicate that firms are as likely to issue good news forecasts as bad news forecasts. On the other hand, Skinner (1993) and Baginski et al. (1994) provide evidence that firms issuing general earnings-related information and preliminary earnings estimates are more likely to disclose bad news than good news. Lang and Lundholm (1993) describe an interesting data base of analysts' perceptions of firms' disclosures. Their data on analysts' perceptions of corporate disclosures, prepared by industry- specific analyst subcommittees, contain evaluations of the adequacy of firms' disclosures along three dimensions: annual published information, quarterly and other published information, and investor relations and related aspects. Lang and Lundholm (1993) relate disclosure quality as measured by analyst scores to firm performance.

While the above mentioned studies attempt to explain when and why firms increase or decrease the amount of disclosure and even relate firm performance to disclosure quality, they fall short of providing any evidence regarding the qualitative textual characteristics of disclosures and the relationship between disclosure quality and abnormal stock price changes. Additionally, they all examine disclosures in a very different regulatory environment.

Bloomfield (2002) states that statistics that are harder to understand will have less of an impact on market prices. Particularly, even though public data is free, it takes time and effort to extract. This costly data will have less of an impact on market prices. Plumlee (2003) provides

evidence that even sophisticated users of financial information have difficulty extracting information from more complex financial disclosures.

Li (2008) and Loughran and McDonald (2008) examine the market impact of the readability of firm annual reports. Li (2008) finds no relationship between readability and stock market returns. However, Loughran and McDonald find that more readable[3] annual reports are more informative to the market when information content is measured as the absolute value of the market-adjusted returns for the three day window beginning with the annual report filing date.

Earlier studies exploring the impact of textual characteristics of media news articles have shown that a higher fraction of negative words (higher pessimism) put downward pressure on stock prices and convey negative information about firm earnings (Tetlock 2007). Additionally, news articles related to firm fundamentals and news articles related to earnings releases provide improved predictability (Tetlock et al. (2008) and Engelberg (2008)).

My study expands the work of Tetlock (2007), Tetlock et al. (2008) and Engelberg (2008); they examine the market impact of qualitative information written by the media while I am interested in examining firm management's ability to influence the market via the use of qualitative information. Additionally, I extend the readability research of Li (2008) and Loughran and McDonald (2008) through the use of earnings disclosures. Quarterly earnings disclosures are management's opportunity to present the results of firm operations to investors and present an ideal sample to examine managements' ability to influence investors with qualitative information. My fifth hypothesis is:

[3] Loughran and McDonald (2008) measure readability with respect to their measure of plain English.

H5: Firms with more readable earnings disclosures will have greater abnormal returns at the disclosure release date than firms with less readable earnings disclosures.

2.5 Earnings Disclosure Readability and Trading Volume

The impact of information on trading volume has been examined in our literature for many years. In their 2002 study Cready and Hurtt state that trading volume is the most visible indicator of the market's response to public disclosures. Karpof (1986) states that increased heterogeneity of beliefs amongst investors leads to increased trading volume. Kim and Verrecchia (1991,1997) state that not only is trading volume positively associated with "belief jumbling" as a result of a current information event, but dispersion in prior levels of information also increase trading volume. Whether readability increases or decreases the information content of earnings disclosures is an open question. On one hand decreased readability could lead to "belief jumbling" and increase the heterogeneity of beliefs amongst investors. If this is the case then we would expect to see trading volume increase as readability of earnings disclosures decreases. On the other hand, decreased readability could cause some investors to choose not to process the report due to the increased time and effort required (Bloomfield 2002). If this is the case then we would expect to see a decrease in trading volume as readability decreases.

A myriad of previous studies, Lang and Lundholm (1996), Healy et al. (1995) and Barron, Kile and O'Keefe (1997), all find that the quality of financial reports has the ability to impact the dispersion of beliefs and therefore impact trading volume. However, their studies do not address the impact of specific textual characteristics of these disclosures. By examining the specific textual characteristics of earnings disclosures my study adds to our understanding of how trading volume is impacted by firm disclosures.

One recent study that uses textual analysis techniques is Loughran and McDonald (2011). Loughran and McDonald (2011) investigate the impact of annual report tone on trading volume. They find that annual report tone is related to announcement returns and trading volume over the 1994 – 2008 time frame. Loughran and McDonald find that more negative words in the annual report are related to increased abnormal trading volume. Additionally, Loughran and McDonald (2011) argue that the Management Discussion and Analysis (MD&A) section of the annual report is the most representative portion of the annual report since management has the ability to have the most influence over the language used. The use of the MD&A section by Loughran and McDonald for their 2011 study lends additional credence to my use of earnings disclosures since earnings disclosures are written by firm managers and are a much less scripted form of disclosure than the previously used annual reports.

My current study expands the trading volume literature by examining the impact of readability of firm earnings disclosures on trading volume. Following the logic put forth by Bloomfield (2002) if a less readable earnings disclosure is more costly to process then some investors will choose not to invest the time required and will not trade. As result, my research predicts that firms with less readable earnings disclosures will exhibit lower trading volume. My final hypothesis is:

H6: Firms with more readable earnings disclosures will have greater abnormal trading volume at the disclosure release date than firms with less readable earnings disclosures.

Figure 1 provides a summary of the previously studied determinants and consequences of readability.

[See Figure 1]

3. SAMPLE SELECTION AND RESEARCH DESIGN

3.1 Sample Selection

My sample begins with the quarterly earnings disclosures for the 798 firms listed on the S&P 500 during the years 1997 through 2007.[4] The quarterly earnings disclosures downloaded from the FACTIVA database were matched with specific firm accounting data, daily returns and analysts' forecasts from the COMPUSTAT, CRSP and I/B/E/S databases, respectively. All firms missing the necessary COMPUSTAT, CRSP or I/B/E/S information have been eliminated yielding a sample of 15,663 earnings disclosures. This number reduces to 13,980 for my volume model and 12,942 in the change specification model.

3.2 Method

To measure disclosure readability I follow the methodology set forth by Li (2008) who utilizes the Fog index from the computational linguistics literature. The Fog index is calculated as the sum of the number of words per sentence, and the percent of complex words (words with three or more syllables) which is then multiplied by .4. The Fog index indicates the number of years of formal education a reader of average intelligence would need to read the text once and understand it.[5]

(1) *FOG = (words per sentence + percent of complex words) *.4*

The Fog index quantifies readability as follows: Fog values greater than 18 means the text is classified as unreadable; 14-18 is difficult, 12-14 is judged to be ideal based on the

[4] All firms listed on the S&P 500 during my sample time-frame are included.
[5] The Fog, Kincaid and Flesch indices are three common linguistic measures of readability. As an additional validity check, I calculated the readability for my sample firms by all three measures.

assumption that the material is being read by an individual of average intelligence; 10-12 is acceptable and 8-10 is childish.

The length of the disclosure is also measured. Loughran and McDonald (2008) and Li (2008) explore the impact of 10-K length. Li (2008) finds that longer 10-K's are generally less readable whereas Loughran and McDonald (2008) find that the length of a well-written 10-K does not detract from its information content. My study further examines the impact of earnings disclosure length on readability; however, since length is not the focus of this study I do not make any predictions on the direction of impact.

Pessimism is measured using the methodology set forth in Tetlock (2007) and Tetlock et al. (2008). I used the standardized fraction of negative words in earnings disclosures to determine the degree of pessimism. This methodology is appropriate since earnings disclosures meet the calculation requirements put forth in Tetlock (2007) and Tetlock et al. (2008) in order to be evaluated for negative pessimism.[6] Like Tetlock I define two measures of negative words: the first is the fraction of negative words to total words and the second is the standardized fraction of negative words.[7]

(2) NEG_{it} = (#of Negative Words for firm i on day t)/ (# of Total Words for firm i on day t)

(3) Pessimism = (NEG-μNEG) / σNEG

[6] Each disclosure must contain at least 50 words with at least 5 words that are either "positive" or "negative", and 3 of those must be unique.

[7] Positive and negative words are identified based on the Harvard-IV-4 dictionary word list which contains 2,291 negative and 1,915 positive words. A complete word list can be found at http://www.wjh.harvard.edu/~inquirer/homecat.htm.

Where:

μNEG = the mean of NEG for the prior year

σNEG = the standard deviation of NEG over the prior calendar year

To test hypotheses H1a through H1c I build on the methodology set forth in Li (2008) and estimate the following regression equation:

(4) $$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4 Earnings*MtBt_{it} + \beta_5 PlainEnglish_{it} + \beta_6 RegFD_{it} + \beta_7 SOX_{it} + \beta_8 IndustryDummies_{it} + \beta_9 ControlVariables_{it} + \varepsilon_{it}$$

Where:

FOG = the level of readability calculated in equation (1).

Earnings = operating earnings scaled by book value of assets.

Pessimism = standardized fraction of negative words calculated in equation (3).

MtBt = dummy variable that equals 1 if the firm meets or beats analysts' consensus forecast of quarterly earnings in the final month of the fiscal quarter for which earnings is being forecast. In order to ensure that forecasts do not contain any information from earnings preannouncements I follow Skinner and Sloan (2002) and use the consensus forecast of quarterly earnings in the final month of the fiscal quarter for which earnings are being forecast to determine whether firms meet, beat or miss earnings estimates.

PlainEnglish = dummy variable equal to 1 for the earnings disclosures released after the promulgation of the plain English guidelines in October 1998 but before Reg. FD was implemented on October 23, 2000.

RegFD = dummy variable equal to 1 for the earnings disclosures released after the implementation of Reg. FD on October 23, 2000 and before the SOX legislation became effective November 15, 2004.

SOX = dummy variable equal to 1 for the earnings disclosures released after the SOX legislation became effective on November 15, 2004.

IndustryDummies = dummy variable classifying firms into the 48 industry groupings of Fama and French (1997) based on the SIC codes reported by the firms.

Control Variables = SIZE, MTB, AGE, INST, SI, NBCOM, NGSEG and DLW.

SIZE = the logarithm of the firm's total assets at the end of their most recent fiscal year. SIZE captures many aspects of a firm's operational and business environment. I expect that larger firms will have more complicated earnings disclosures and thus will be negatively related to readability.

MTB = firm market to book ratio defined as the market value of equity plus book value of liabilities divided by the book value of total assets at the end of the fiscal year. MTB is included since growth firms may have more complex and uncertain business models and as a result would be expected to be negatively related to readability.

AGE = number of years since first appearance in the CRSP monthly stock return files. AGE is included since older firms may exhibit less information asymmetry and less information uncertainty. I expect a positive relationship between AGE and readability.

INST = the proportion of stock owned by institutional investors as reported on the firm's Form 13-F for the previous quarter. Since institutional investors are superior information processors (Plumlee 2003) managers will be less concerned with the readability of earnings disclosures when the proportion of institutional ownership is high. I expect INST to be positively associated with *FOG* (negatively associated with readability).

SI = special items scaled by book value of assets. SI is included since firms with a significant amount of special items are more likely to have more lengthy and complex earnings disclosures in order to describe unusual events. As a result, I expect a negative relationship between SI and readability.

NBCOM = the logarithm of 1 plus the number of business components. The Complexity of a firm's operations is based, at least in part, on the number of business components. I expect a negative relationship between NBCOM and readability.

NGSEG = logarithm of 1 plus the number of geographic segments. The Complexity of a firm's operations is based, at least in part, on the number of geographic segments. I expect a negative relationship between NGSEG and readability.

DLW = 1 if a company was incorporated in Delaware, 0 otherwise. The state of incorporation may have an impact on disclosure readability since different states; Delaware in particular, have different corporate laws.

For equation (4) the variables of interest are the three regulatory regime dummy variables: *PlainEnglish, RegFD* and *SOX*. My research predicts that readability has improved with each change in regulatory regime and as a result, I expect *PlainEnglish, RegFD* and *SOX* to all have negative coefficients.

To test my hypotheses that firms with higher earnings have more readable disclosures, firms with higher levels of pessimism have less readable earnings disclosures and firms that meet/beat analyst forecasts have more readable disclosures, I estimate the following model:

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4 Earnings*MtBt_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it} \quad (5)$$

In order to investigate the differential impact of profit versus loss on firms' earnings disclosure readability, I replace the earnings variable in equation (5) with a dummy variable, *Profit/Loss*, which equals 1 if a company reports a profit and 0 otherwise. That leads to the following model:

$$FOG_{it} = \beta_0 + \beta_1 Profit/Loss_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4 Profit/Loss*MtBt_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it} \quad (6)$$

In equations (5) and (6) my variables of interest are *Earnings*, *Pessimism*, *MtBt*, *Profit/Loss* and the interaction variables *Earnings*MtBt* and *Profit/Loss*MtBt*. Following my hypothesis that firms with higher earnings have more readable earnings disclosures, I expect a negative sign on the coefficient of *Earnings* in equation (5) as well as a negative sign on the coefficient of *Profit/Loss* in equation (6). I anticipate a positive sign on the coefficient of

Pessimism in both equation (5) and (6) since I predict that firms with higher levels of pessimism have less readable earnings disclosures. The sign on the *MtBt* coefficient in equations (5) and (6) should also be negative since I predict that firms that meet or beat analyst estimates have more readable earnings disclosures. The coefficients on the interactions between *Earnings* and *MtBt* and *Profit/Loss* and *MtBt* in equations (5) and (6) are also predicted to be negative.

To further investigate the impact of earnings on readability I create a change model specification patterned after the change specification used in Li (2008). I use this model to investigate whether firms that experience an increase in earnings also exhibit an increase in earnings disclosure readability.

$$\Delta FOG_{it} = \beta_0 + \beta_1 \Delta Earnings_{it} + \beta_2 \Delta Pessimism_{it} + \beta_3 Earnings\ Indicator_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it} \quad (7)$$

My dependent variable, ΔFOG, is calculated as the change in readability as measured by the change in Fog index from the previous quarter. My variables of interest in equation (7) are $\Delta Earnings$, $\Delta Pessimism$ and *Earnings Indicator*. $\Delta Earnings$ is the change in firm quarterly operating earnings scaled by book value of assets. $\Delta Pessimism$ is the change in pessimism from the previous quarter. *Earnings Indicator* is an indicator variable that equals 1 when the firm reports an increase in earnings and 0 otherwise. I predict a negative sign on the variable $\Delta Earnings$ since firms that experience an increase in earnings are expected to write more readable quarterly earnings disclosures when compared to the previous quarter. Similarly, I predict that *Earnings Indicator* will also have a negative sign. $\Delta Pessimism$ is predicted to have a positive sign since firms that exhibit an increase in pessimism in their quarterly earnings disclosures are anticipated to have a decrease in readability when compared to the previous quarter.

In order to test my hypothesis that firms with more readable earnings disclosures will have greater cumulative abnormal returns (CAR) around the release date, I use a size-adjusted model to estimate abnormal returns. Previous studies of market reactions to earnings disclosures find differential reactions for large versus small firms (Collins et al.1987, Freeman 1987; O'Brien and Bhushan 1990). These studies show that the market reaction is greater for smaller rather than larger firms since there is greater incentive for investors in larger firms to search for additional information, or spend more time examining information. Additionally, following the methodology used in Palmrose et al. (2004), Fischer and Verrecchia (1997) and Core and Schrand (1999), my model includes a control variable to capture the different market reactions across debt levels. Prior literature (Kinney and McDaniel 1989, Palmrose and Scholz 2004) shows that investor reaction to news for firms with strong recent stock performance differs from investor reactions for weaker performers. As a result, I include buy and hold returns over 120 days prior to the disclosure (day 120 to day -1). Since institutional investors are superior information processors (Plumlee 2003), my model includes a control variable to capture the proportion of institutional investors. Tetlock (2007), Tetlock et al. (2008) and Engelberg (2008) find that higher levels of pessimism convey negative information about firm earnings and put downward pressure on stock prices. As a result, I include the variable *Pessimism.*

My regression model can be summarized as follows:

$$CAR_{it} = \beta_0 + \beta_1 120\_DAY_{it} + \beta_2 ASSETS_{it} + \beta_3 DEBT_{it} + \beta_4 SURP_{it} + \beta_5 Pessimism_{it} + \beta_6 INST_{it} + \beta_7 FOG_{it} + \beta_8 LENGTH_{it} + \beta_9 FOG*LENGTH_{it} + \beta_{10} SURP*FOG_{it} + \beta_{11} SURP*LENGTH_{it} + \beta_{12} SURP*FOG*LENGTH_{it} + \varepsilon_{it} \quad (8)$$

Where:

CAR = the firm's cumulative abnormal return for the (0, +1) timeframe surrounding the disclosure date.

120_DAY = the firm's buy and hold returns for the 120 days prior to the disclosure (-120, -1).

ASSETS = the log of the firm's total assets at the end of their most recent fiscal year.

DEBT = the ratio of the firm's long-term debt to total assets.[8]

SURP = Diluted earnings per share before extraordinary items for current quarterly report less the same measure for year-ago quarter, scaled by price at fiscal year-end prior to announcement.

LENGTH = Ln (Number of words). The natural log of the number of words is used to eliminate the skewness from extreme values and differences in firms and disclosure types (Li, 2008).

My variables of interest in equation (8) are *FOG*, *Pessimism*, *FOG*LENGTH*, *SURP*FOG*, *SURP*LENGTH*, and *SURP*FOG*LENGTH*. My research predicts that managers can lessen the impact of negative firm information by making earnings disclosures less readable. As a result, I expect negative coefficients on all of the aforementioned variables of interest.

In order to test my hypothesis that firms with more readable quarterly earnings disclosures will have greater trading volume I estimate the following model that builds on the models in Kim and Verrecchia(1997), Bailey et al. (2003) and Barber et al. (2009) :

$$ABVOL = \beta_0 + \beta_1 FOG_{it} + \beta_2 Pessimism_{it} + \beta_3 Length_{it} + \beta_4 NA_{it} + \beta_5 FORDISP_{it} \quad (9)$$
$$B_6 ABSCAR_{it} + \beta_7 ASSETS_{it} + \beta_8 INSTit + \beta_9 FOG*LENGTH_{it} + \varepsilon_{it}$$

[8] By using debt to total assets I avoid potential problems created by very small or negative equity.

Where:

ABVOL= is the measure of abnormal trading volume and is used in place of raw volume to lessen the impact of technological trading improvements during my sample period (Barber et al. 2009). ABVOL is measured as the mean daily trading volume (0,+1) minus the mean daily trading volume during the non-filing period.

NA = the log of 1 plus the number of analysts following a firm. I expect that, all else equal, there will be less new information in an earnings disclosure for firms with a larger analyst following. As a result I predict a negative sign on NA.

ABSCAR = the absolute value of the firm's cumulative abnormal return for the (0, +1) timeframe surrounding the disclosure date. *ABSCAR* helps to isolate trading volume attributed to preannouncement differential informedness (Bailey et al.2003). Based on the results of previous literature, I expect a positive relationship between ABSCAR and ABVOL.

FORDISP = analyst forecast dispersion measured as the standard deviation of the most recent individual forecasts (Bailey et al. 2003). Analyst forecast dispersion is expected to be negatively related to ABVOL.

My variables of interest in equation (9) are *FOG*, *Pessimism*, *LENGTH* and *FOG*LENGTH*. My research predicts that as readability increases, abnormal trading volume increases. As a result, I expect the coefficient on FOG to have a negative sign. Additionally, I expect that firms with increased levels of pessimism will have higher levels of abnormal trading volume. I make no directional predictions for the variables *LENGTH* and *FOG*LENGTH*.

4. EMPIRICAL RESULTS

4.1 Summary Statistics

Panel A of Table 1 presents the summary statistics for the sample. Overall, earnings disclosures of the S&P 500 firms are classified as "difficult" to read with a mean and median Fog of 15.971, and 15.81, respectively. Mean and median length of earnings disclosures are 3,011 and 2,504 words, respectively with the 99th percentile having 10,159 words. Panel B of Table 1 shows the Pearson correlation matrix.

[See Table 1]

Figure 2 plots the median, 90th percentile, 75th percentile, 25th percentile and 10th percentile of *FOG* levels for firms over the 1997-2007 timeframe. The graph shows that over the timeframe of this study the readability of earnings disclosures has been generally decreasing. Li (2008) documents an oscillating trend of median annual report readability during 1994-2004. His graph shows that the median *FOG* of annual reports was highest in 1998 and then began a sharp decrease to reach its low in 2001. During 2002-2004 Li documents a sharp increase in *FOG* and a decrease in annual report readability. The results of my study show that earning disclosure readability has had a much smoother trend over the1997-2007 timeframe than was seen in annual report readability. My results show that, at the median, readability was at its best in 2000 and then sharply decreased until 2003. Following its peak in 2003, *FOG* decreased again until the implementation of SOX at the end of 2004. From the implementation of SOX to the end of my timeframe earnings disclosure median *FOG* is steadily increasing and therefore readability is decreasing. The graph of median earnings disclosure readability shows that the

median readability of earnings disclosures has generally decreased during the 1997-2007 timeframe and was only temporarily positively impacted by the SEC's Plain English Guidelines. While the graphs related to the 90^{th}, 75^{th}, 25^{th}, and 10^{th} percentiles of *FOG* show slightly different peaks and valleys the overall trends tell a similar story. The graph shows that both Reg. FD and SOX have negatively impacted median earnings disclosure readability at all levels.

[See Figure 2]

4.2 Determinants of Earnings Disclosure Readability

Hypothesis 1 predicts increases in earnings disclosure readability as a result of changes in our regulatory environment. Specifically, hypotheses 1a, 1b and 1c predict that the readability of earnings disclosures improved following the promulgation of the Plain English Guidelines in October 1998, the implementation of Regulation FD on October 23, 2000 and the implementation of SOX on November 15, 2004. Table 2 Panel A presents the results of regressing *FOG* on operating earnings (*Earnings*), the amount of pessimism (*Pessimism*), the meet or beat indicator variable (*MtBt*) and the indicator variables *PlainEnglish*, *RegFD* and *SOX*, control variables and the 48 Fama French industry indicator variables. The negative and significant coefficient on the PlainEnglish indicator variable (p-value = .080) indicates that, as predicted, readability improved following the promulgation of the Plain English Guidelines. However, as shown by the positive significant coefficients on both the Reg. FD (p-value = .008) and SOX indicator variables (p-value = .000) the implementation of Regulation FD and SOX did not improve earnings disclosure readability. In fact, based on my results, both Reg. FD and SOX

decreased the readability of earnings disclosures. In order to show the incremental value of each change in the regulatory environment, Table 2 is divided into multiple panels. The results in Table 2 Panels B through E show that in all models the regulatory environment indicator variables are significant. Additionally, the adjusted R^2 improves as the model builds[9]. The results shown in Table 2 highlight new findings in the disclosure research that contribute significantly to regulators' understanding the actual impact of regulatory changes. Both Regulation FD and SOX have negatively impacted earnings disclosure readability. The SEC's direct attempt to improve the readability of firm financial information, the Plain English Guidelines, appears to have had a very short impact in that regard[10].

[See Table 2]

Equation (5) was used to test hypotheses 2, 3 and 4 and the results are shown in Table 3. Hypothesis 2 predicts that firms with higher earnings will have more readable earnings disclosures than firms with lower earnings. This hypothesis is supported as the significant and negative coefficient on *Earnings* (p-value = .000) indicates that firms with higher earnings do have more readable earnings disclosures than firms with lower earnings. Hypothesis 3 predicts that firms with higher levels of pessimism will have less readable earnings disclosures than firms with lower levels of pessimism and is supported by the significant and positive coefficient on *Pessimism* (p-value = .000). Hypothesis 4 predicts that firms that meet or beat analysts' forecasts will have more readable earnings disclosures than firms that miss analysts, forecasts. While the

[9] All regressions included my control variables as well as the Fama French 48 industry indicator variables. Full results for all regressions can be found in appendix I.
[10] In untabulated results data was winsorized at the 5% level. Results were not significantly different.

coefficient on MtBt is significant (p-value=.001) it does not have the predicted negative sign. Therefore the hypothesis that, holding all else equal, firms that meet or beat analysts' forecasts have more readable earnings disclosures is not supported by my results. However, the coefficient on interaction term *Earnings*MtBt* is negative and significant (P-value = .001). This interaction term demonstrates that for firms with higher earnings which meet or beat analyst forecasts, earnings disclosures are generally more readable than the earnings disclosures of firms that have the same earnings but do not meet or beat forecasts.

[See Table 3]

Since my hypothesis that firms that merely meet or beat analyst forecasts did not hold, I investigated further the relationship between meeting and/or beating analysts' consensus forecast of quarterly earnings and earning disclosure readability. In order to do so I replaced the meet or beat indicator variable *(MtBt)* in Equation (5) with the indicator variable *(Beat)* that is equal to 1 if the firm beats analysts' forecasts and 0 otherwise. I performed an additional regression of *FOG* on operating earnings *(Earnings)*, the amount of pessimism in the disclosure *(Pessimism)*, an indicator variable *(Beat)*, control variables, year indicator variables, and the Fama French 48 industry indicator variables. The results of the variables of interest of this regression are shown in Table 4. The negative and significant coefficient on *Beat* (p-value = .017) indicates that, all else equal, firms that beat analysts' forecasts have more readable earnings disclosures than firms that missed or merely met analyst forecasts. Additionally, the coefficient of the interaction term *Earnings*Beat* is negative and significant (p-value = .001). This yields the additional

information that firms that have higher earnings and beat analyst estimates have more readable earnings disclosures than firms with the same earnings that either missed or met analyst estimates.

[See Table 4]

Equation 6 investigates the impact of profit versus loss on earnings disclosure readability. Equation 6 replaces the *Earnings* variable in my previous model with a *Profit/Loss* indicator variable. The results of this investigation can be found in Table 5. The coefficient on the *Profit/Loss* indicator variable has the predicted negative sign and is significant (p-value = .039). These results highlight that all else being the equal, profitable firms have more readable quarterly earnings disclosures than firms that experienced losses in the current quarter.

[See Table 5]

The results of regressing the change earnings disclosure readability *(*ΔFOG) on the change in quarterly earnings *(*$\Delta Earnings$), the change in pessimism *(*$\Delta Pessimism$) and my control variables are shown in Table 5. My hypothesis that earnings disclosure readability decreases as firm quarterly earnings decrease is supported by the significant and negative coefficient on $\Delta Earnings$ (p-value = .021). These results are particularly interesting since the change specification model shows that all else being equal, when firm quarterly earnings decrease, firm managers write less readable earnings disclosures. Additionally, the positive and significant coefficient on $\Delta Pessimism$ (p-value = .000) demonstrates that if pessimism increases from one

quarter to the next the readability of the earnings disclosure decreases from one quarter to the next. Although, I did not have a hypothesis related to the impact of the change in earnings on the length of the earnings disclosure I performed additional analysis. In this analysis I regressed the change in length *(*Δ*LENGTH*) on the change specification variables found in equation (7). The results of this regression yield interesting results. The positive and significant coefficient on Δ*Earnings* (p-value = .039) indicates that as earnings decrease from one quarter to the next, the length of the earnings disclosure decreases. Additionally, the negative and significant coefficient on Δ*Pessimism* (p-value = .000) shows that as pessimism increases from one quarter to the next the length increases.

[See Table 6]

The role of institutional investors has been examined in a variety of contexts in our literature. My current study adds another dimension to the discussion surrounding the role of institutional investors. My models use the control variable *INST* equal to the proportion of stock owned by institutional investors as reported on the firm's Form 13-F for the previous quarter. I expected INST to be negatively associated with readability since institutional investors are more sophisticated and have a greater ability and incentive to process more complex information. However, my models produced some surprising results in this area. In all of my level models examining the determinants of quarterly earnings disclosure readability, the coefficient on *INST* is negative and significant. These results indicate that institutional investors tend to contribute to more readable earnings disclosures and may actually have a monitoring effect on management.

The full tables located in the appendix show the results related to the year indictor variables as well as the Fama French 48 industry variables for the applicable models. The year indicator variables are all positive and significant. While my current study is not focused on whether particular industries have more or less readable quarterly earnings disclosures, the results related to the Fama French 48 industry variables show that some industry classifications are positively related to readability while others show negative relationships. Future studies might prove fruitful in this area.

4.3 Consequences of Earnings Disclosure Readability

My fifth hypothesis predicts that firms with more readable earnings disclosures will have greater abnormal returns at the disclosure release date than firms with less readable earnings disclosures. To test this hypothesis, I regressed CAR (0,+1) on the firm's recent stock performance, size, debt level, proportion of institutional ownership, level of pessimism, readability (FOG), length, and the diluted earnings per share before extraordinary items for the current quarter less the same measure for a year-ago scaled by the price at the prior fiscal year end. Results of this regression are shown in Table 7. My variables of interest, *FOG, Pessimism FOG*LENGTH, SURP*FOG*, and *SURP*FOG*LENGTH* are all insignificant. Since *FOG* and none of the interactions with *FOG* are significant my fifth hypothesis is not supported. However, an interesting finding is that the coefficient on *SURP*LENGTH* is negative and significant (p-value = .086). This result indicates that CAR (0,+1) decreases when there is an earnings surprise and the earnings disclosure is lengthier.

[See Table 7]

My final hypothesis relates earnings disclosure readability to abnormal trading volume. My research predicts that firms with more readable earnings disclosures will have greater abnormal trading volume at the disclosure release date than firms with less readable earnings disclosures. The results of Equation 9 are shown in Table 8. Specifically, the negative and significant coefficient on *FOG* (p-value = .003) shows that as readability of earnings disclosures increases, abnormal volume also increases. In addition, the significant and positive coefficient on *Pessimism* (p-value = .001) shows that abnormal trading volume increases as levels of pessimism increase. This result contributes to the theory that an increase in negative words does not deter trading, but instead leads to "belief jumbling." Interestingly, the significant and negative coefficient on *LENGTH* (p-value = .004) indicates that an increase in the length of the earnings disclosure also decreases abnormal trading volume.

[See Table 8]

5. CONCLUSIONS, CONTRIBUTIONS, LIMITATIONS, and FUTURE RESEARCH

5.1 Conclusions and Contributions

My research examines whether the changing regulatory environment has had an impact on earnings disclosure readability and whether firm managers are able to make negative information less transparent to the market by making negative earnings disclosures less readable. Based on the results of this study, changes in the regulatory environment have had an impact of earning disclosure readability. Specifically, the most recent changes in our regulatory environment have generally decreased the readability of earnings disclosures. This result would seem to contradict regulators' intentions. This study's second finding is that firms with lower operating earnings generally have less readable earnings disclosures. The major contribution of this study lies in the results of the change model. The results of the change model demonstrate that an increase in operating earnings from quarter to quarter yields an increase in earnings disclosure readability from quarter to quarter. Similarly, a decrease in quarter to quarter earnings yields a decrease in earnings disclosure readability. The significant relationship between changes in firm operating earnings and changes in earnings disclosure readability contributes to the line of reasoning that firm managers will try to obfuscate negative information, in this case negative earnings. The results of this study clearly show that operating earnings are a determinant of earnings disclosure readability.

The results of this study also show that there are market consequences of earnings disclosure readability. Although, cumulative abnormal return at the release date is not significantly impacted by earnings disclosure readability, abnormal volume at the release date is. My study shows that more readable earnings disclosures exhibit higher abnormal trading.

Additionally, this study shows that an increase in the length of an earnings disclosure will deter some traders and lead to a decrease in abnormal trading volume.

My study contributes to the literature in a number of ways. The idea that management may attempt to reduce the impact of bad news by making it more costly to analyze is not new and is described by the incomplete revelation hypothesis. However, studying the qualitative aspects of disclosure that contain negative news is a unique setting to explore the empirical impacts of this theory. This study extends previous work on annual report readability since the length and style of periodic unaudited disclosures are more flexible and less scripted than annual reports. As a result, earnings disclosures more accurately reflect firm managements' beliefs, attitudes and desire to inform or obfuscate analysts, investors and creditors.

To the best of my knowledge, this is the first study relating meeting, beating or missing earnings forecast estimates to readability. Previous studies have shown that firm managers actively manage accruals and expectations in order to avoid the negative market reaction associated with negative earnings surprises (Matsumoto 2002, Bartov et al.2002). However, this study adds to the discussion by exploring another possible avenue for firm managers to influence the market reaction to meeting, beating or missing earnings estimates.

Finally, the study of the earnings disclosures over the 1997-2007 timeframe is important to regulators due to the number of changes in the regulatory environment during this timeframe. Knowing the impact on disclosure readability of the implementation of the three individual regulatory regime changes (i.e. Plain English Guidelines, Reg. FD and SOX) helps regulators determine the successfulness of their efforts to increase the accessibility of firm financial reports to the average investor and determine the amount of public firm information available to investors and analysts.

My current research applies recent advances in information systems and textual analysis to analyze communications provided by managers regarding firm value. The results provide some insight into the nature of earnings disclosures and how firm management utilizes readability to provide firm financial information to financial statement users or make firm financial information less transparent.

5.2 Limitations and Future Research

I acknowledge some potential limitations of my current study. First, this study only examines the earnings disclosures related to firms listed on the S&P 500 index. Since the S&P 500 index contains large companies and the information environments associated with large firms has been shown to differ from that of smaller firms (e.g. Easley et al. 1996), these results may not be generalizable to smaller firms. A potentially fruitful study would involve comparing the impact of the readability of earnings disclosures for a sample of small and mid-cap firms. By exploring the differential impact of readability between large, small and mid-sized firms over the same time period, we could add to the knowledge of the impact of changes in the regulatory environment and contribute to the literature regarding information environments and the information content of earnings disclosures.

An inability to determine the intent of firm managers is another limitation of this study. While this study has measured readability and determined factors that contribute to higher or lower levels of readability, it is unable to truly determine managers' intent. While a particular firm may suffer from less readable earnings disclosures, this study cannot prove that firm managers intended to construct a less-readable document. The current study does, however, bring to light the results of less readable earnings disclosures and emphasize to firm managers and investment relations officers the need for clear and concise firm documents. In an attempt

to add to the discussion on management intent, an investigation into the differences in readability between a sample of firms that have restated earnings following an earnings disclosure compared to a matched sample of firms with correctly stated earnings would be insightful. Furthermore, textual analysis on the disclosures that communicate the SOX defined internal control weaknesses: control deficiencies, significant deficiencies, and material weaknesses could also add to the discussion of management intent.

An additional avenue for future research could involve an investigation into the role of institutional investors. While this current work shows that institutional ownership is related to more readable quarterly earnings disclosures, it does not investigate whether different types of institutional ownership structures impact readability differently. Furthermore, a future research could investigate the potential that there are differing impacts on disclosure readability for firms that have a large single institutional owner versus firms that have many institutional investors with smaller relative ownership shares. Previous research has documented differential impacts on CEO compensation structure depending on the relationship between firm management and the institutional investors (Parthiban et al. 1998). This line of reasoning may extend to the readability research and warrants future investigation.

REFERENCES:

A Plain English Handbook: How to create clear SEC disclosure documents. 1998. Retrieved from Office of Investor Education and Assistance, U.S. Securities and exchange Commision: http://www.sec.gov/pdf/handbook.pdf

Ajinkya B. B., and M. J. Gift. 1984. Corporate Managers' Earnings Forecasts and Symmetrical Adjustments of Market Expectations, *Journal of Accounting Research* 22 (2): 425-444.

Baginski, S.P., Hassell, J.M., and G. Waymire. 1994. Some evidence on the news content of preliminary earnings estimates, *The Accounting Review* 9: 265-273.

Bailey, W., Li, H., Mao, C.X., and R. Zhong, 2003. Regulation fair disclosure and earnings information: market, analyst, and corporate responses, *Journal of Finance* 58: 2487–2514.

Baker, H.E., and D. D. Kare, 1992. Relationship between annual report readability and corporate financial performance, *Management Research News* 15: 1–4.

Ball, R., and P. Brown. 1968. An empirical evaluation of accounting income numbers. *Journal of Accounting Research* (Autumn): 159-178.

Banz, R. 1981. The relationship between returns and market value of common stocks. *Journal of Financial Economics* 6: 103-126.

Barber, B., T. Odean, and N. Zhu. 2009. Do retail traders move markets? *Review of Financial Studies* (January): 151-186.

Barnett, A. and K. Leoffler, 1979. Readability of accounting and auditing messages, *Journal of Business Communication* 16: 49–59.

Barron, O., C. Kile, and T. O'Keefe. 1997. MD&A quality as measured by the SEC and analysts' earnings forecasts. Working paper, Emory University, Atlanta, GA.

Bartov, E., Givoly, D., and C. Hayn, 2002. The rewards to meeting or beating earnings expectations, *Journal of Accounting and Economics* 33: 173-204.

Bernard, V. and J. Thomas. 1989. Post-earnings announcement drift: Delayed price response or risk premium? *Journal of Accounting Research* (Supplement): 1-48.

Bloomfield, R.J. 2002. The ''incomplete revelation hypothesis'' and financial reporting, *Accounting Horizons* 16: 233–243.

Bloomfield, R. 2008. Discussion of annual report readability, current earnings, and earnings persistence, *Journal of Accounting and Economics* 45: 248-252.

Brown, L.D. and M.L. Caylor. 2005. A temporal analysis of quarterly earnings thresholds: Propensities and valuation consequences. *The Accounting Review*. 80(2):423-440.

Burgstahler, D. and I. Dichev. 1997. Earnings management to avoid earnings decreases and loses. *Journal of Accounting and Economics* 24:99-126.

Burgstahler, D. and M.Eames. 2006. Management of earnings and analysts' forecasts to achieve zero and small earnings surprises. *Journal of Business Finance and Accounting* 33 (5-6): 633-52.

Cready, W. and D. Hurtt. 2002. Assessing investor response to information events using return and volume metrics. *The Accounting Review* 77 (October):891-909.

Collins, D.W., S.P. Kothari and J.D. Rayburn. 1987. Firm size and the information content of prices with respect to earnings. *Journal of Accounting and Economics* 9: 111–138.

Core, J.E. and C.M. Schrand. 1999. The effect of accounting-based debt covenants on equity valuation. *Journal of Accounting and Economics* 27: 1–34.
Courtis, J.K., 1986. An investigation into annual report readability and corporate risk return relationships, *Accounting and Business Research* 285–294.

Degeorge, F, Patel, J. and R. Zeckhauser. 1999. Earnings management to exceed thresholds, *Journal of Business* 72 (1): 1-32.

Easley, D., Kiefer, N. M., O'Hara, M., and J.P. Paperman. 1996. Liquidity, Information, and Infrequently Trades Stocks. *Journal of Finance* 51(4): 1405-1436.

Engelberg, J. 2008. Costly Information Processing: Evidence from Earnings Announcements. Working Paper. Northwestern University

Fama, E., and K. French. 1997. Industry costs of equity. *Journal of Financial Economics* 43: 153-193.

Fischer, P.E.and R.E. Verrecchia. 1997. The effect of limited liability on the market response to disclosure. *Contemporary Accounting Research* 14: 515–541.

Frankel, R., W. J. Mayew and Y.Sun. 2010. Do pennies matter? Investor relations consequences of small negative earnings surprises. *Review of Accounting Studies* 15: 220-242.

Freeman, R.N. 1987. The association between accounting earnings and security returns for large and small firms. *Journal of Accounting and Economics* 9:195–228.

Graham, J., C. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40:3-73.

Healy, P. 1977. Can you understand the footnotes to financial statements? *Accountants Journal* 219–222.

Healy, P. and K. Palepu, and A. Sweeney. 1995. Causes and consequences of expanded voluntary disclosure. Working paper, Massachusetts Institute of Technology, Cambridge, MA.

Healy, P. and K. Palepu. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics* 31: 405–440.

Heflin, F., Subramanyam, K.R., and Y. Zhang. 2003. Regulation FD and the financial information environment: early evidence. *Accounting Review* 78: 1–37.

Jones, M.J., and P. A. Shoemaker. 1994. Accounting narratives: a review of empirical studies of content and readability. *Journal of Accounting Literature* 13: 142.

Karpoff, M. 1986. A theory of trading volume. *Journal of Finance* 41 (December): 1069-1087.

Kim, O., and R. E. Verrecchia. 1991. Trading volume and price reactions to public announcements. *Journal of Accounting Research* 29 (Autumn): 302-321.

Kim, O., and R. E. Verrecchia. 1997. Pre-announcement and event-period private information. *Journal of Accounting and Economics* 24: 395-419.

Kinney Jr., W.R. and L.S. McDaniel. 1989. Characteristics of firms correcting previously reported quarterly earnings. *Journal of Accounting and Economics* 11: 71–93.

Lang, M., and R. Lundholm. 1993. Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research (*Autumn): 246–271.

Lang, M., and R. Lundholm. 1996. Corporate disclosure policy and analyst behavior. *The Accounting Review* 71 *(*October): 467-492.

Lev, B., and S. H. Penman. 1990. Voluntary Forecast Disclosure, Nondisclosure, and Stock Prices. *Journal of Accounting Research* 28: 49-76.

Lebar, M.A. 1982. A general semantics analysis of selected sections of the 10-k the annual report to shareholders, and the financial press release. *The Accounting Review* 57: 176–189.

Li, F. 2008. Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics* 45: 221-247.

Loughran, T. and B. McDonald. 2008. Plain English. Working paper, University of Notre Dame.

Loughran, T. and B. McDonald. 2011. When is a liability not a liability? Textual analysis, dictionaries, and 10-K's.*Journal of Finance* 66(1): 35-65.

Mandatory Disclosure Documents Telephone Survey. July 30, 2008
Submitted to The Securities and Exchange Commission Office of Investor Education and Advocacy. Submitted by Abt SRBI

Matsumoto, D. A.. 2002. Management's incentives to avoid negative earnings surprises. *The Accounting Review* 64: 1-27.

McNichols, M. 1989. Evidence of informational asymmetries from management earnings forecasts and stock returns. *The Accounting Review* 64: 1–27.

Miller, G.S. 2002. Earnings performance and discretionary disclosure. *Journal of Accounting Research* 40: 173–204.

Miller, B. 2008. Data Overload and Investor Trading. Working Paper. Pennsylvania State University.

Moore, T. P., J. W. McCahon, and S. B. Jones. 2001.(4)1. Living with the new regulation, opportunities, consequences. *Investor Relations Quarterly* pp. 35-53.

Nichols, C. D., and J. M. Wahlen. 2004. How do earnings numbers relate to stock returns? A review of classic accounting research with updated evidence. *Accounting Horizons* 18(4): 263-286.

O'Brien, P. and R. Bhushan. 1990. Analyst following and institutional ownership. *Journal of Accounting Research* 28:55-76.

Palmrose, Z. V. and S. Scholz. 2004. The accounting causes and legal consequences of non-GAAP reporting: Evidence from restatements. *Contemporary Accounting Research* 21(1): 139-55.

Palmrose, Z. V., V. J. Richardson and S. Scholz. 2004. Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics* 37: 59-89.

Parthiban D., R. Kochhar and E. Levitas. 1998. The effect of institutional investors on the level and mix of CEO compensation. *The Academy of Management Journal* 41(2) 200-208.

Pashalian S. and W. J. Crissy. 1952. Corporate annual reports are dull reading, human interest value low, survey shows. *Journal of Accountancy* 94(2) 215-231.

Patell, J. 1976. Corporate Forecasts of Earnings per share and stock price behavior: Empirical tests. *Journal of Accounting Research* 246-76.

Penman, S. H. 1980. An Empirical Investigation of the Voluntary Disclosure of Corporate Earnings Forecasts, *Journal of Accounting Research*, 18: 132-160.

Plumlee, M. A. 2003. The Effect of Information Complexity on Analysts' Use of That Information. *The Accounting Review* 78: 275-296.

Remarks at the Plain Language Association International's Fifth International Conference. hhttp://www.sec.gov/news/speech/spch110405cag.htmi.

Schrand, C.M., Walther, B.R. 2000. Strategic benchmarks in earnings announcement: the selective disclosure of prior-period earnings components. *The Accounting Review* 75: 151–177.

Securities and Exchange Commission. 2000. Final rule: Selective disclosure and insider trading. *http://www.sec.gov/rules/final/33-7881.htm.*

Securities Industry Association, 2001, Costs and benefits of Regulation Fair Disclosure, mimeo.

Skinner, D. 1993. The investment opportunity set and accounting procedure choice: preliminary evidence. *Journal of Accounting and Economics* 17: 407–446.

Skinner, D. and R. G. Sloan. 2002. Earnings surprises, growth expectations and stock returns, or don't let a torpedo stock sink your portfolio. *Review of Accounting Studies* 7(2-3): 289-312.

Smith, J.E., and N. P. Smith. 1971. Readability: a measure of the performance of the communication function of financial reporting. *The Accounting Review* 46: 552–561.

Soper, F.J., and R. Dolphin. 1964. Readability and corporate annual reports. *The Accounting Review* 39: 358–362.

SRBI, A. 2008. July 30. Mandatory Disclosure Documents Telephone Survey. *Submitted to The Securities and Exchange Commission Office of Investor Education and Advocacy* .

Straser, V. 2002. Regulation Fair Disclosure and Information Asymmetry. Working Paper. The University of Notre Dame.

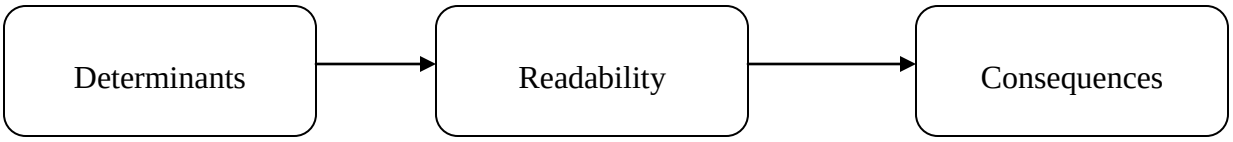
Subramanian, R., Insley, R.G., and R. D. Blackwell.1993. Performance and readability: a comparison of annual reports of profitable and unprofitable corporations. *Journal of Business Communication* 30: 49–61.

Tetlock, P. C. 2007. Giving Content to investor sentiment: The role of media in the stock market. *The Journal of Finance* 62(3): 1139-1167.

Tetlock, P. C., Saar-Tsechansky, M. and S. Macskassy. 2008. More than words: quantifying language to measure firms' fundamentals. *The Journal of Finance* 63(3): 1437-1467.

Figure 1

A Summary of the Previously Studied Determinants and Consequences of Readability



Annual Reports

Li (2008)

- Size
- Age
- Complexity of operations
- State of incorporation
- Growth verses non-growth
- Industry
- Year
- Earnings level
- Profit verses firm
- Earnings persistence
- Unexercised employee stock options

Loughran and McDonald (2008) *

- Corporate governance structures
- Auditor
- Year

Annual Reports

Li (2008)

- No relationship between readability and 12-month stock return

Miller (2008)

- No relationship between readability, trading volume or consensus

Loughran and McDonald (2008) *

- SEO in the following year
- Change in trades of 100 share or less

* Results based on Plain English Metric instead of FOG index.

Table 1

(A) Summary statistics; (B) Pearson correlation matrix

Variable	Mean	Median	Std. Dev.	1st	25th	75th	99th
(A)							
FOG	15.9708	15.8086	2.6033	11.1141	13.9200	17.7713	22.3704
Length	3,011	2,504	1,994	1,222	1,664	3,650	10,159
MTB	2.4089	1.7284	2.4841	0.9337	1.2692	2.6224	10.5893
SIZE	3.6887	3.6379	0.5216	2.4729	3.3458	4.0342	5.0601
SI	-0.0041	0.0000	0.0430	-0.0720	-0.0014	0.0000	0.0197
AGE	29	26	22	2	11	40	81
Earnings	0.0266	0.0249	0.0314	-0.0451	0.0132	0.0399	0.1044
INST	0.6903	0.7316	0.2045	0.0139	0.5954	0.8307	0.9800
NGSEG	6.5479	2	14.0637	1	2	7	99
NBCOM	5.8326	2	6.3458	1	1	9	29
Pessimism	-0.0364	0.0079	0.9544	-2.6794	-0.6254	0.6358	1.8255

(B)

	FOG	Length	MTB	SIZE	SI	AGE	Earnings	SURP	INST
FOG									
Length	0.0397								
MTB	0.1226	-0.135							
SIZE	0.0129	0.3423	0.366						
SI	-0.0528	0.003	-0.0268	0.0325					
AGE	-0.1005	0.0912	-0.1959	0.404	0.0469				
Earnings	-0.1471	-0.0337	0.2074	-0.0574	0.1028	0.0208			
SURP	0.0263	0.0078	-0.0077	-0.0179	-0.2816	-0.0226	0.0998		
INST	-0.0702	0.0103	0.0152	0.0383	-0.0067	-0.0231	0.1326	0.0021	
Pessimism	0.3428	-0.0683	0.0875	0.0034	0.0029	0.0841	0.0009	-0.0165	-0.0353

FOG = (words per sentence + percent of complex words) *.4. LENGTH = Ln (Number of words). Earnings = operating earnings scaled by book value of assets. Pessimism = standardized fraction of negative words calculated in equation (3). SIZE = the logarithm of the firm's total assets at the end of their most recent fiscal year. MTB = firm market to book ratio defined as the market value of equity plus book value of liabilities divided by the book value of total assets at the end of the fiscal year. AGE = number of years since first appearance in the CRSP monthly stock return files. INST = the proportion of stock owned by institutional investors as reported on the firm's Form 13-F for the previous quarter. SI = special items scaled by book value of assets. NBCOM = the logarithm of 1 plus the number of business components. NGSEG = logarithm of 1 plus the number of geographic segments. SURP = Diluted earnings per share before extraordinary items for current quarterly report less the same measure for year-ago quarter, scaled by price at fiscal year-end prior to announcement.

Figure 2

Graph of *FOG* Levels during the 1997-2007 Timeframe

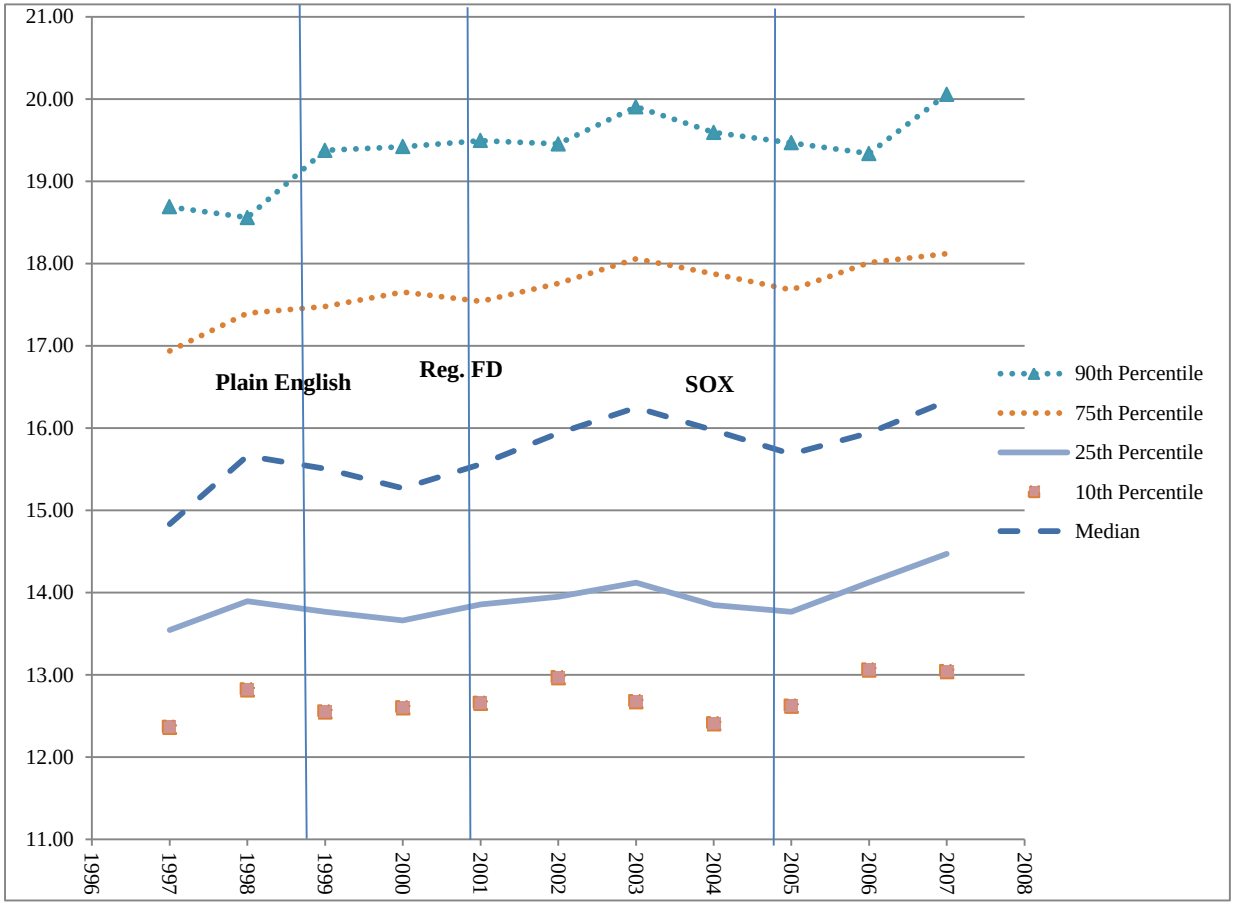


Table 2

Regression Analysis of the Impact of Changes in the Regulatory Environment

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4\, Earnings*MtBt_{it} + \beta_5 PlainEnglish_{it} + \beta_6 RegFD_{it} + \beta_7 SOX_{it} + \beta_8 IndustryDummies_{it} + \beta_9 ControlVariables_{it} + \varepsilon_{it}$$

			Panel A			Panel B			Panel C			Panel D			Panel E		
	Variable	**Predicted Sign**	**Coefficient**	**p-value**	**Robust Std. Err.**	**Coefficient**	**p-value**	**Robust Std. Err.**	**Coefficient**	**p-value**	**Robust Std. Err.**	**Coefficient**	**p-value**	**Robust Std. Err.**	**Coefficient**	**p-value**	**Robust Std. Err.**
	Intercept		15.7542	0.000	0.414	15.9382	0.000	0.413	15.8830	0.000	0.408	15.5247	0.000	0.401	15.7009	0.000	0.400
	Earnings	-	-5.7138	0.000	1.363	-5.5930	0.000	1.359	-5.5685	0.000	1.336	-5.6730	0.000	1.294	-5.7137	0.000	1.397
	Pessimism	+	0.7252	0.000	0.035	0.7193	0.000	0.035	0.7203	0.000	0.035	0.7295	0.000	0.035	0.7175	0.000	0.035
Variables of Interest	MtBt	-	0.3129	0.000	0.086	0.2947	0.001	0.086	0.2971	0.001	0.086	0.2835	0.001	0.085	0.3090	0.000	0.086
	Earnings*MtBt	-	-6.8872	0.001	2.022	-6.6838	0.001	2.023	-6.6157	0.001	2.009	-6.3212	0.001	1.987	-7.1661	0.000	2.045
	PlainEnglish	-	-0.1945	0.080	0.111	-0.4966	0.000	0.092	-0.4702	0.000	0.085						
	RegFD	-	0.2536	0.008	0.096	-0.5847	0.004	0.070				0.6144	0.000	0.081			
	SOX	-	0.4553	0.000	0.098										0.3664	0.000	0.069
	MTB	+	0.0471	0.000	0.012	0.0469	0.000	0.012	0.0467	0.000	0.012	0.0507	0.000	0.012	0.0378	0.001	0.012
	DLW		0.0266	0.730	0.077	0.0304	0.694	0.077	0.0298	0.700	0.077	0.0193	0.802	0.077	0.0399	0.607	0.077
	SIZE	+	0.4557	0.000	0.079	0.4860	0.000	0.079	0.4938	0.000	0.078	0.4622	0.000	0.078	0.4663	0.000	0.079
Control Variables	INST	+	-0.4863	0.003	0.166	-0.4505	0.006	0.165	-0.4389	0.007	0.164	-0.4884	0.003	0.164	-0.4455	0.007	0.165
	SI	-	-0.8774	0.385	1.011	-0.9208	0.358	1.001	-0.8892	0.372	0.996	-0.8712	0.377	0.986	-1.0228	0.318	1.023
	AGE	-	-0.0145	0.000	0.002	-0.0143	0.000	0.002	-0.0143	0.000	0.002	-0.0142	0.000	0.002	-0.0146	0.000	0.002
	NGSEG	+	0.0018	0.419	0.002	0.0017	0.443	0.002	0.0017	0.447	0.002	0.0013	0.556	0.002	0.0022	0.340	0.002
	NBCOM	+	0.0163	0.012	0.006	0.0172	0.008	0.006	0.0172	0.008	0.006	0.0162	0.013	0.007	0.0170	0.009	0.006
	N	15,663		Adj R^2	0.3543		Adj R^2	0.3508		Adj R^2	0.3507		Adj R^2	0.3507		Adj R^2	0.3507

Panel A - Variables of interest: PlainEnglish, RegFD, SOX
Panel B - Variables of interest: PlainEnglish, RegFD
Panel C - Variables of interest: PlainEnglish
Panel D - Variables of interest: RegFD
Panel E - Variables of interest: SOX

Table 3

Regression Analysis of the Impact of Earnings, Pessimism, and Meeting or Beating Analyst Forecasts on Readability

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4 Earnings*MtBt_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

N	15,663
Adj R^2	0.3630

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
	Intercept		15.3481	0.000	36.060	0.426
Variables of Interest	Earnings	-	-5.7454	0.000	-4.280	1.343
	MtBt	-	0.2799	0.001	3.280	0.085
	Earnings*MtBt	-	-6.7112	0.001	-3.350	2.006
	Pessimism	+	0.7366	0.000	20.910	0.035
Control Variables	MTB	+	0.0515	0.000	3.970	0.013
	DLW		0.0216	0.778	0.280	0.077
	SIZE	+	0.4040	0.000	5.080	0.080
	SI	-	-0.9014	0.339	-0.960	0.944
	AGE	-	-0.0149	0.000	-7.480	0.002
	INST	+	-0.5228	0.002	-3.170	0.165
	NGSEG	+	0.0018	0.411	0.820	0.002
	NBCOM	+	0.0154	0.017	2.390	0.006

Variables of interest: *Earnings*, *Pessimism*, *MtBt* and the interaction variable *Earnings*MtBt*.

Table 4
Regression Analysis of the Impact of Earnings, Pessimism, and Beating Analyst Forecasts on Readability

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 Beat_{it} + \beta_4 Earnings*Beat_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

N	15,663
Adj R^2	0.3627

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
	Intercept		15.3936	0.000	36.120	0.426
Variables of Interest	Earnings	-	-5.7169	0.000	-4.350	1.314
	Pessimism	+	0.7367	0.000	20.910	0.035
	Beat	-	-0.2068	0.017	-2.390	0.087
	Earnings*Beat	-	-6.5653	0.001	-3.420	1.921
Control Variables	MTB	+	0.0517	0.000	4.000	0.013
	DLW		0.0224	0.771	0.290	0.077
	SIZE	+	0.4021	0.000	5.050	0.080
	SI	-	-0.9012	0.335	-0.960	0.936
	AGE	-	-0.0150	0.000	-7.510	0.002
	INST	+	-0.5239	0.002	-3.170	0.165
	NGSEG	+	0.0019	0.404	0.830	0.002
	NBCOM	+	0.0156	0.015	2.420	0.006

Variables of interest: *Earnings*, *Pessimism*, *Beat* and the interaction variable *Earnings*Beat*.

Table 5
Regression Analysis of the Impact of Profit Versus Loss on Earnings Disclosure Readability

$$FOG_{it} = \beta_0 + \beta_1 Profit/Loss_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4 Profit/Loss*MtBt_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

					N	15,663
					Adj R^2	0.3549
	Variables	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
	Intercept		15.5536	0.000	34.920	0.445
Variables of Interest	Profit/Loss	-	-0.3297	0.039	-2.060	0.160
	Pessimism	+	0.7374	0.000	20.850	0.035
	MtBt	-	0.3190	0.155	1.420	0.224
	Profit/Loss*MtBt	-	-0.2814	0.228	-1.210	0.233
Control Variables	MTB	+	0.0271	0.027	2.220	0.012
	DLW		-0.0119	0.878	-0.150	0.078
	SIZE	+	0.4374	0.000	5.490	0.080
	SI	-	-1.3492	0.021	-2.310	0.584
	AGE	-	-0.0158	0.000	-7.840	0.002
	INST	+	-0.6315	0.000	-3.820	0.165
	NGSEG	+	0.0017	0.451	0.750	0.002
	NBCOM	+	0.0151	0.022	2.300	0.007
Year Indicator Variables	Year98		0.4252	0.034	2.130	0.200
	Year99		0.3829	0.060	1.880	0.204
	Year00		0.4843	0.015	2.430	0.200
	Year01		0.6857	0.000	3.670	0.187
	Year02		0.9785	0.000	5.280	0.185
	Year03		1.2255	0.000	6.490	0.189
	Year04		0.9203	0.000	4.850	0.190
	Year05		0.8831	0.000	4.650	0.190
	Year06		1.2042	0.000	6.330	0.190
	Year07		1.3556	0.000	7.050	0.192

Table 6
Regression Analysis of the Impact of Changes in Earnings and Pessimism on Changes in Readability and Length

$$\Delta FOG_{it} = \beta_0 + \beta_1 \Delta Earnings_{it} + \beta_2 \Delta Pessimism_{it} + \beta_3 Earnings\ Indicator_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

Panel A

Dependent Variable				N	12,942
ΔFog				**Adj R^2**	0.0829

	Variables	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
	Intercept		-0.5150	0.190	-1.310	0.393
Variables of Interest	ΔEarnings	-	-1.7799	0.021	-2.310	0.769
	Earning Indicator	-	-0.1017	0.035	-2.110	0.048
	ΔPessimism	+	0.5029	0.000	10.980	0.046
Control Variables	MTB	+	-0.0206	0.138	-1.490	0.014
	DLW		-0.0184	0.739	-0.330	0.055
	SIZE	+	0.0577	0.344	0.950	0.061
	SI	-	-0.6913	0.349	-0.940	0.738
	AGE	-	-0.0010	0.471	-0.720	0.001
	INST	+	-0.0986	0.401	-0.840	0.117
	NGSEG	+	-0.0002	0.912	-0.110	0.001
	NBCOM	+	-0.0013	0.799	-0.250	0.005

$$\Delta Length_{it} = \beta_0 + \beta_1 \Delta Earnings_{it} + \beta_2 \Delta Pessimism_{it} + \beta_3 Earnings\ Indicator_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

Panel B

Dependent Variable				N	12,942
ΔLength				**Adj R^2**	0.0829

	Variable	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
	Intercept		-0.6281	0.000	-5.510	0.114
Variables of Interest	ΔEarnings		0.8022	0.039	2.070	0.388
	Earnings Indicator		-0.1086	0.000	-8.100	0.013
	ΔPessimism		-0.0635	0.000	-4.870	0.013
Control Variables	MTB		-0.0038	0.357	-0.920	0.004
	DLW		-0.0081	0.566	-0.570	0.014
	SIZE		0.0323	0.053	1.940	0.017
	SI		0.1421	0.200	1.280	0.111
	AGE		-0.0001	0.768	-0.290	0.000
	INST		0.0285	0.326	0.980	0.029
	NGSEG		-0.0004	0.355	-0.920	0.000
	NBCOM		-0.0015	0.214	-1.240	0.001

Variables of interest: Δ*Earnings,* Δ*Pessimism* and *Earnings Indicator.*

Table 7

Regression Analysis of the Impact of Earnings Disclosure Readability on CAR

$$CAR_{it} = \beta_0 + \beta_1 120\_DAY_{it} + \beta_2 ASSETS_{it} + \beta_3 DEBT_{it} + \beta_4 SURP_{it} + \beta_5 Pessimism_{it} + \beta_6 INST_{it} + \beta_7 FOG_{it} + \beta_8 LENGTH_{it} + \beta_9 FOG*LENGTH_{it} + \beta_{10} SURP*FOG_{it} + \beta_{11} SURP*LENGTH_{it} + \beta_{12} SURP*FOG*LENGTH_{it} + \varepsilon_{it}$$

Dependent Variable		**N**	15,663
CAR (0,+1)		**Adj R^2**	0.0118

Variable	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
Intercept		0.0193	0.745	0.320	0.059
120_DAY	+	0.0107	0.023	2.280	0.005
ASSETS	-	-0.0084	0.000	4.380	0.002
Pessimism	-	-0.0008	0.459	0.740	0.001
DEBT	-	-0.0056	0.432	-0.790	0.007
INST	-	-0.0124	0.035	-2.110	0.006
SURP	+	3.3251	0.119	1.560	2.134
FOG	-	-0.0044	0.265	-1.110	0.004
LENGTH	-	-0.0049	0.520	-0.640	0.008
FOG*LENGTH	-	0.0005	0.330	0.970	0.001
SURP*FOG	-	-0.1984	0.166	-1.390	0.143
SURP*LENGTH	-	0.4614	0.086	-1.720	0.268
SURP*FOG*LENGTH	-	0.0274	0.126	1.530	0.018

Variables of interest: *FOG*, *Pessimism*, *FOG*LENGTH*, *SURP*FOG*, *SURP*LENGTH*, and *SURP*FOG*LENGTH*.

Table 8

Regression Analysis of the Impact of Earning Disclosure Readability on Abnormal Trading Volume

$$ABVOL = \beta_0 + \beta_1 FOG_{it} + \beta_2 Pessimism_{it} + \beta_3 Length_{it} + \beta_4 NA_{it} + \beta_5 FORDISP_{it} + B_6 ABSCAR_{it} + \beta_7 ASSETS_{it} + \beta_8 INSTit + \beta_9 FOG*LENGTH_{it} + \varepsilon_{it}$$

				N	13,980
Dependent Variable				**Adj R^2**	0.148
ABVOL (0,+1)					
Variables	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
Intercept		8.3254	0.012	2.510	3.314
FOG	-	-0.6112	0.003	-2.970	0.205
ABSCAR	+	4.8782	0.000	-5.040	0.969
ASSETS	+	0.9725	0.000	13.700	0.071
INST		-0.2014	0.297	-1.040	0.193
Pessimism	+	0.1067	0.001	3.280	0.033
FORDISP	-	-0.0085	0.000	-3.570	0.002
NA	-	-0.5223	0.000	-11.950	0.044
FOG*LENGTH		0.0649	0.013	2.480	0.026
LENGTH		-1.2132	0.004	-2.880	0.422

Variables of interest: *FOG*, *Pessimism*, *LENGTH* and *FOG*LENGTH*.

Appendix

Table 2-1A

Full Results for Table 2 Panel A

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4\ Earnings*MtBt_{it} + \beta_5 PlainEnglish_{it} + \beta_6 RegFD_{it} + \beta_7 SOX_{it} + \beta_8 IndustryDummies_{it} + \beta_9 ControlVariables_{it} + \varepsilon_{it}$$

					N	15,663
					Adj R^2	0.3543
	Variable	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
Variables of Interest	Intercept		15.7542	0.000	38.080	0.414
	Earnings	-	-5.7138	0.000	-4.190	1.363
	Pessimism	+	0.7252	0.000	20.540	0.035
	MtBt	-	0.3129	0.000	3.660	0.086
	Earnings*MtBt	-	-6.8872	0.001	-3.410	2.022
	PlainEnglish	-	-0.1945	0.080	-1.750	0.111
Control Variables	RegFD	-	0.2536	0.008	2.650	0.096
	SOX	-	0.4553	0.000	4.650	0.098
	MTB	+	0.0471	0.000	3.820	0.012
	DLW		0.0266	0.730	0.350	0.077
	SIZE	+	0.4557	0.000	5.770	0.079
	INST	+	-0.4863	0.003	-2.940	0.166
	SI	-	-0.8774	0.385	-0.870	1.011
	AGE	-	-0.0145	0.000	-7.290	0.002
	NGSEG	+	0.0018	0.419	0.810	0.002
	NBCOM	+	0.0163	0.012	2.520	0.006

Table 2-1A Continued

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	agric		-3.8856	0.000	-10.850	0.358
	food		-2.2275	0.000	-5.310	0.419
	soda		-0.1507	0.679	-0.410	0.364
	beer		-0.8065	0.046	-2.000	0.404
	smoke		-3.5062	0.000	-5.680	0.618
	fun		-0.7241	0.237	-1.180	0.612
	toys		-1.8224	0.000	-4.790	0.380
	books		-2.1382	0.000	-6.360	0.336
	other		-1.6880	0.370	-0.900	1.882
	fin		-1.8596	0.000	-5.850	0.318
	rlest		(dropped)			
	insur		-1.9318	0.000	-6.070	0.318
	banks		-3.3011	0.000	-4.310	0.765
	meals		-0.7123	0.000	-3.770	0.189
	rtail		-2.0198	0.000	-6.650	0.304
	whlsl		-1.0966	0.001	-3.350	0.327
	trans		-0.6027	0.135	-1.500	0.403
	boxes		-1.5317	0.000	-4.370	0.350
	paper		-1.7144	0.000	-4.960	0.346
	labeq		-0.2286	0.561	-0.580	0.393
	chips		-1.1612	0.000	-3.660	0.317
	comps		-0.8538	0.005	-2.800	0.304
	bussv		1.0247	0.001	3.380	0.303
	persv		-2.5672	0.000	-7.720	0.332
	telcm		0.5863	0.088	1.710	0.343
	util		-0.3318	0.324	-0.990	0.336
	oil		-1.4257	0.000	-4.370	0.326
	coal		(dropped)			
	mines		-0.6230	0.793	-0.260	2.370
	gold		-1.8085	0.443	-0.770	2.358
	guns		0.3876	0.319	1.000	0.389
	ships		(dropped)			
	aero		0.8428	0.036	2.090	0.402
	fabpr		(dropped)			
	mach		-1.5465	0.000	-4.340	0.356
	elceq		0.3319	0.330	0.970	0.341
	autos		-0.2825	0.524	-0.640	0.444
	steel		(dropped)			
	cnstr		-1.5402	0.000	-4.260	0.362
	rubbr		-2.0945	0.000	-5.130	0.408
	txtls		2.8835	0.000	7.190	0.401
	bldmt		-1.9025	0.000	-4.920	0.387
	chems		1.0643	0.003	2.970	0.358
	drugs		-0.1622	0.608	-0.510	0.316
	medeq		-1.6675	0.000	-4.270	0.391
	hlth		-0.8545	0.028	-2.200	0.388
	clths		-4.2757	0.000	-13.220	0.323
	hshld		-0.5351	0.067	-1.830	0.292

Table 2-1B

Full Results for Table 2 Panel B

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4 Earnings*MtBt_{it} + \beta_5 PlainEnglish_{it} + \beta_6 RegFD_{it} + \beta_7 IndustryDummies_{it} + \beta_8 ControlVariables_{it} + \varepsilon_{it}$$

					N	15,663
					Adj R^2	0.3508
	Variable	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
Variables of Interest	Intercept		15.9382	0.000	38.550	0.413
	Earnings	-	-5.5930	0.000	-4.110	1.359
	Pessimism	+	0.7193	0.000	20.420	0.035
	MtBt	-	0.2947	0.001	3.440	0.086
	Earnings*MtBt	-	-6.6838	0.001	-3.300	2.023
	PlainEnglish	-	-0.4966	0.000	-5.400	0.092
	RegFD	-	0.5847	0.004	0.830	0.070
Control Variables	SOX	-				
	MTB	+	0.0469	0.000	3.790	0.012
	DLW		0.0304	0.694	0.390	0.077
	SIZE	+	0.4860	0.000	6.190	0.079
	INST	+	-0.4505	0.006	-2.730	0.165
	SI	-	-0.9208	0.358	-0.920	1.001
	AGE	-	-0.0143	0.000	-7.230	0.002
	NGSEG	+	0.0017	0.443	0.770	0.002
	NBCOM	+	0.0172	0.008	2.640	0.006

Table 2-1B Continued

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	agric		-3.9880	0.000	-11.460	0.348
	food		-2.2677	0.000	-5.400	0.420
	soda		-0.1043	0.778	-0.280	0.370
	beer		-0.8127	0.044	-2.020	0.403
	smoke		-3.4550	0.000	-5.590	0.618
	fun		-0.8687	0.183	-1.330	0.652
	toys		-1.7688	0.000	-4.650	0.381
	books		-2.1639	0.000	-6.390	0.339
	other		-1.7094	0.348	-0.940	1.822
	fin		-1.8728	0.000	-5.860	0.320
	rlest		(dropped)			
	insur		-1.9535	0.000	-6.110	0.320
	banks		-3.4651	0.000	-4.450	0.779
	meals		-0.7102	0.000	-3.760	0.189
	rtail		-2.0192	0.000	-6.610	0.305
	whlsl		-1.1116	0.001	-3.380	0.328
	trans		-0.6147	0.124	-1.540	0.400
	boxes		-1.5275	0.000	-4.350	0.351
	paper		-1.7485	0.000	-5.020	0.348
	labeq		-0.1942	0.623	-0.490	0.395
	chips		-1.1564	0.000	-3.630	0.319
	comps		-0.8482	0.006	-2.770	0.306
	bussv		1.0147	0.001	3.330	0.305
	persv		-2.6005	0.000	-7.760	0.335
	telcm		0.5678	0.096	1.660	0.341
	util		-0.3563	0.291	-1.060	0.337
	oil		-1.4616	0.000	-4.450	0.329
	coal		(dropped)			
	mines		-0.5763	0.817	-0.230	2.490
	gold		-1.9130	0.440	-0.770	2.478
	guns		0.2592	0.507	0.660	0.391
	ships		(dropped)			
	aero		0.8098	0.043	2.020	0.400
	fabpr		(dropped)			
	mach		-1.5530	0.000	-4.350	0.357
	elceq		0.3330	0.335	0.960	0.346
	autos		-0.2960	0.505	-0.670	0.444
	steel		(dropped)			
	cnstr		-1.5749	0.000	-4.320	0.365
	rubbr		-2.0983	0.000	-5.120	0.410
	txtls		2.9217	0.000	7.370	0.396
	bldmt		-1.9075	0.000	-4.910	0.389
	chems		1.0442	0.004	2.900	0.360
	drugs		-0.1765	0.579	-0.560	0.318
	medeq		-1.6705	0.000	-4.260	0.392
	hlth		-0.8661	0.026	-2.230	0.389
	clths		-4.3032	0.000	-13.130	0.328
	hshld		-0.5637	0.058	-1.900	0.297

Table 2-1C

Full Results for Table 2 Panel C

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4\ Earnings*MtBt_{it} + \beta_5 PlainEnglish_{it} + \beta_6 IndustryDummies_{it} + \beta_7 ControlVariables_{it} + \varepsilon_{it}$$

					N	15,663
					Adj R^2	0.3507
	Variable	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
Variables of Interest	Intercept		15.8830	0.000	38.950	0.408
	Earnings		-5.5685	0.000	-4.170	1.336
	Pessimism	-	0.7203	0.000	20.460	0.035
	MtBt	+	0.2971	0.001	3.470	0.086
	Earnings*MtBt	-	-6.6157	0.001	-3.290	2.009
	PlainEnglish	-	-0.4702	0.000	-5.560	0.085
Control Variables	RegFD	-				
	SOX	-				
	MTB	-				
	DLW	+	0.0467	0.000	3.790	0.012
	SIZE		0.0298	0.700	0.390	0.077
	INST	+	0.4938	0.000	6.330	0.078
	SI	+	-0.4389	0.007	-2.680	0.164
	AGE	-	-0.8892	0.372	-0.890	0.996
	NGSEG	-	-0.0143	0.000	-7.230	0.002
	NBCOM	+	0.0017	0.447	0.760	0.002
		+	0.0172	0.008	2.650	0.006

Table 2-1C Continued

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	agric		-3.9889	0.000	-11.460	0.348
	food		-2.2892	0.000	-5.470	0.418
	soda		-0.0917	0.804	-0.250	0.369
	beer		-0.8172	0.042	-2.030	0.403
	smoke		-3.4479	0.000	-5.600	0.616
	fun		-0.8681	0.181	-1.340	0.649
	toys		-1.7874	0.000	-4.710	0.380
	books		-2.1773	0.000	-6.450	0.338
	other		-1.7140	0.373	-0.890	1.923
	fin		-1.8809	0.000	-5.890	0.319
	rlest		(dropped)			
	insur		-1.9640	0.000	-6.150	0.319
	banks		-3.4837	0.000	-4.480	0.777
	meals		-0.7058	0.000	-3.740	0.189
	rtail		-2.0293	0.000	-6.660	0.305
	whlsl		-1.1181	0.001	-3.410	0.328
	trans		-0.6136	0.124	-1.540	0.399
	boxes		-1.5331	0.000	-4.380	0.350
	paper		-1.7679	0.000	-5.100	0.347
	labeq		-0.1929	0.625	-0.490	0.394
	chips		-1.1641	0.000	-3.660	0.318
	comps		-0.8565	0.005	-2.810	0.305
	bussv		1.0073	0.001	3.310	0.304
	persv		-2.6199	0.000	-7.870	0.333
	telcm		0.5589	0.100	1.640	0.340
	util		-0.3728	0.268	-1.110	0.336
	oil		-1.4730	0.000	-4.490	0.328
	coal		(dropped)			
	mines		-0.5949	0.814	-0.240	2.527
	gold		-1.9063	0.449	-0.760	2.515
	guns		0.2337	0.547	0.600	0.388
	ships		(dropped)			
	aero		0.7959	0.046	2.000	0.398
	fabpr		(dropped)			
	mach		-1.5614	0.000	-4.380	0.356
	elceq		0.3159	0.360	0.920	0.345
	autos		-0.3162	0.476	-0.710	0.443
	steel		(dropped)			
	cnstr		-1.5919	0.000	-4.370	0.364
	rubbr		-2.1299	0.000	-5.260	0.405
	txtls		2.9322	0.000	7.440	0.394
	bldmt		-1.9129	0.000	-4.920	0.389
	chems		1.0340	0.004	2.880	0.359
	drugs		-0.1882	0.553	-0.590	0.317
	medeq		-1.6830	0.000	-4.290	0.392
	hlth		-0.8698	0.025	-2.240	0.389
	clths		-4.3202	0.000	-13.240	0.326
	hshld		-0.5638	0.058	-1.900	0.297

Table 2-1D

Full Results for Table 2 Panel D

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4\, Earnings{*}MtBt_{it} + \beta_5 RegFD_{it} + \beta_6 IndustryDummies_{it} + \beta_7 ControlVariables_{it} + \varepsilon_{it}$$

					N	15,663
					Adj R^2	0.3507
	Variable	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
Variables of Interest	Intercept		15.5247	0.000	38.700	0.401
	Earnings	-	-5.6730	0.000	-4.380	1.294
	Pessimism	+	0.7295	0.000	20.700	0.035
	MtBt	-	0.2835	0.001	3.330	0.085
	Earnings*MtBt	-	-6.3212	0.001	-3.180	1.987
	PlainEnglish	-				
	RegFD	-	0.6144	0.000	7.600	0.081
	SOX	-				
Control Variables	MTB	+	0.0507	0.000	4.060	0.012
	DLW		0.0193	0.802	0.250	0.077
	SIZE	+	0.4622	0.000	5.900	0.078
	INST	+	-0.4884	0.003	-2.980	0.164
	SI	-	-0.8712	0.377	-0.880	0.986
	AGE	-	-0.0142	0.000	-7.190	0.002
	NGSEG	+	0.0013	0.556	0.590	0.002
	NBCOM	+	0.0162	0.013	2.490	0.007

Table 2-1D Continued

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	agric		-3.8204	0.000	-10.200	0.375
	food		-2.3658	0.000	-5.650	0.419
	soda		-0.1020	0.783	-0.280	0.370
	beer		-0.7269	0.075	-1.780	0.408
	smoke		-3.5242	0.000	-5.650	0.623
	toys		-1.8881	0.000	-4.950	0.381
	fun		-0.6324	0.283	-1.070	0.590
	books		-2.2166	0.000	-6.580	0.337
	other		-1.6723	0.464	-0.730	2.283
	fin		-1.9295	0.000	-6.030	0.320
	rlest		(dropped)			
	insur		-2.0009	0.000	-6.260	0.319
	banks		-3.2399	0.000	-4.300	0.754
	meals		-0.7107	0.000	-3.760	0.189
	rtail		-2.0929	0.000	-6.860	0.305
	whlsl		-1.1466	0.000	-3.490	0.329
	trans		-0.5827	0.144	-1.460	0.399
	boxes		-1.6109	0.000	-4.580	0.352
	paper		-1.7998	0.000	-5.210	0.346
	labeq		-0.2660	0.499	-0.680	0.393
	chips		-1.2449	0.000	-3.900	0.319
	comps		-0.8968	0.003	-2.930	0.306
	bussv		0.9501	0.002	3.120	0.305
	persv		-2.6858	0.000	-8.080	0.333
	telcm		0.5026	0.140	1.480	0.341
	util		-0.4472	0.184	-1.330	0.337
	oil		-1.4848	0.000	-4.520	0.328
	coal		(dropped)			
	mines		-0.6925	0.782	-0.280	2.502
	guns		0.3781	0.331	0.970	0.389
	gold		-1.8271	0.463	-0.730	2.490
	ships		(dropped)			
	aero		0.7589	0.057	1.900	0.399
	fabpr		(dropped)			
	mach		-1.5896	0.000	-4.460	0.356
	elceq		0.2705	0.423	0.800	0.338
	autos		-0.3581	0.419	-0.810	0.443
	steel		(dropped)			
	cnstr		-1.6579	0.000	-4.600	0.360
	rubbr		-2.1716	0.000	-5.470	0.397
	txtls		2.9548	0.000	7.460	0.396
	bldmt		-1.9708	0.000	-5.070	0.389
	chems		0.9903	0.006	2.760	0.359
	drugs		-0.2409	0.448	-0.760	0.317
	medeq		-1.7758	0.000	-4.520	0.393
	hlth		-0.9418	0.016	-2.420	0.389
	clths		-4.4162	0.000	-13.510	0.327
	hshld		-0.5294	0.070	-1.810	0.292

Table 2-1E

Full Results for Table 2 Panel E

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4\, Earnings*MtBt_{it} + \beta_5 SOX_{it} + \beta_6 IndustryDummies_{it} + \beta_7 ControlVariables_{it} + \varepsilon_{it}$$

					N	15,663
					Adj R^2	0.3507
	Variable	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
	Intercept		15.7009	0.000	39.220	0.400
	Earnings	-	-5.7137	0.000	-4.090	1.397
Variables of Interest	Pessimism	+	0.7175	0.000	20.310	0.035
	MtBt	-	0.3090	0.000	3.580	0.086
	Earnings*MtBt	-	-7.1661	0.000	-3.500	2.045
	PlainEnglish	-				
	RegFD	-				
	SOX	-	0.3664	0.000	5.280	0.069
	MTB	+	0.0378	0.001	3.200	0.012
	DLW		0.0399	0.607	0.510	0.077
	SIZE	+	0.4663	0.000	5.940	0.079
Control Variables	INST	+	-0.4455	0.007	-2.700	0.165
	SI	-	-1.0228	0.318	-1.000	1.023
	AGE	-	-0.0146	0.000	-7.350	0.002
	NGSEG	+	0.0022	0.340	0.950	0.002
	NBCOM	+	0.0170	0.009	2.630	0.006

Table 2-1E Continued

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	agric		-4.0427	0.000	-10.870	0.372
	food		-2.0835	0.000	-4.990	0.418
	soda		-0.1721	0.636	-0.470	0.364
	beer		-0.9101	0.021	-2.300	0.395
	smoke		-3.4239	0.000	-5.530	0.619
	toys		-1.6392	0.000	-4.340	0.378
	fun		-0.8450	0.150	-1.440	0.587
	books		-2.0582	0.000	-6.130	0.336
	other		-1.8940	0.373	-0.890	2.127
	fin		-1.7774	0.000	-5.650	0.315
	rlest		(dropped)			
	insur		-1.8499	0.000	-5.840	0.317
	banks		-3.3562	0.000	-4.290	0.783
	meals		-0.7184	0.000	-3.860	0.186
	rtail		-1.9158	0.000	-6.370	0.301
	whlsl		-1.0487	0.001	-3.230	0.324
	trans		-0.5866	0.148	-1.450	0.405
	boxes		-1.4264	0.000	-4.080	0.349
	paper		-1.6311	0.000	-4.730	0.345
	labeq		-0.1362	0.729	-0.350	0.393
	chips		-1.0505	0.001	-3.340	0.315
	comps		-0.8059	0.008	-2.660	0.303
	bussv		1.1175	0.000	3.710	0.301
	persv		-2.4375	0.000	-7.240	0.337
	telcm		0.6528	0.057	1.900	0.343
	util		-0.2048	0.541	-0.610	0.335
	oil		-1.3642	0.000	-4.200	0.324
	coal		(dropped)			
	mines		-0.4413	0.847	-0.190	2.292
	guns		0.3939	0.314	1.010	0.391
	gold		-1.9293	0.397	-0.850	2.280
	ships		(dropped)			
	aero		0.9100	0.024	2.260	0.403
	fabpr		(dropped)			
	mach		-1.4985	0.000	-4.210	0.356
	elceq		0.3226	0.356	0.920	0.350
	autos		-0.2200	0.620	-0.500	0.444
	steel		(dropped)			
	cnstr		-1.4576	0.000	-4.050	0.360
	rubbr		-1.9890	0.000	-4.540	0.438
	txtls		2.7811	0.000	6.910	0.402
	bldmt		-1.8286	0.000	-4.740	0.386
	chems		1.1743	0.001	3.260	0.360
	drugs		-0.0581	0.853	-0.190	0.314
	medeq		-1.5384	0.000	-3.960	0.389
	hlth		-0.7665	0.046	-1.990	0.385
	clths		-4.1131	0.000	-12.770	0.322
	hshld		-0.5069	0.088	-1.710	0.297

Table 3-1
Full Results for Table 3

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4 Earnings*MtBt_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

					N	15,663
					Adj R^2	0.3630
	Variable	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
	Intercept		15.3481	0.000	36.060	0.426
Variables of Interest	Earnings	-	-5.7454	0.000	-4.280	1.343
	MtBt	-	0.2799	0.001	3.280	0.085
	Earnings*MtBt	-	-6.7112	0.001	-3.350	2.006
	Pessimism	+	0.7366	0.000	20.910	0.035
Control Variables	MTB	+	0.0515	0.000	3.970	0.013
	DLW		0.0216	0.778	0.280	0.077
	SIZE	+	0.4040	0.000	5.080	0.080
	SI	-	-0.9014	0.339	-0.960	0.944
	AGE	-	-0.0149	0.000	-7.480	0.002
	INST	+	-0.5228	0.002	-3.170	0.165
	NGSEG	+	0.0018	0.411	0.820	0.002
	NBCOM	+	0.0154	0.017	2.390	0.006
Year Indicator Variables	Year98		0.4527	0.024	2.260	0.200
	Year99		0.3823	0.060	1.880	0.203
	Year00		0.4847	0.015	2.440	0.198
	Year01		0.6846	0.000	3.680	0.186
	Year02		0.9740	0.000	5.270	0.185
	Year03		1.2131	0.000	6.440	0.188
	Year04		0.8865	0.000	4.680	0.189
	Year05		0.8803	0.000	4.630	0.190
	Year06		1.2319	0.000	6.470	0.190
	Year07		1.3707	0.000	7.140	0.192

Table 3-1 Continued

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	hshld		-0.4832	0.089	-1.700	0.284
	clths		-4.4491	0.000	-13.700	0.325
	hlth		-0.9598	0.014	-2.470	0.389
	medeq		-1.7564	0.000	-4.510	0.389
	drugs		-0.1913	0.545	-0.600	0.316
	chems		1.0782	0.003	3.000	0.359
	bldmt		-1.9451	0.000	-5.020	0.387
	txtls		2.9820	0.000	7.070	0.422
	rubbr		-2.1265	0.000	-5.170	0.411
	cnstr		-1.5114	0.000	-4.210	0.359
	steel		-1.6272	0.000	-4.620	0.353
	autos		-0.3041	0.491	-0.690	0.442
	elceq		0.2444	0.463	0.730	0.333
	mach		-1.5530	0.000	-4.370	0.355
	fabpr		(dropped)			
	aero		0.7778	0.055	1.920	0.405
	ships		(dropped)			
	guns		0.7091	0.074	1.780	0.397
	gold		-2.0644	0.381	-0.880	2.355
	mines		-0.3735	0.875	-0.160	2.367
	coal		(dropped)			
	oil		-1.3853	0.000	-4.260	0.325
	util		-0.3497	0.298	-1.040	0.336
	telcm		0.4993	0.143	1.470	0.341
	persv		-2.5779	0.000	-7.620	0.338
	bussv		0.9763	0.001	3.220	0.303
	comps		-0.8725	0.004	-2.850	0.306
	chips		-1.2325	0.000	-3.890	0.317
	labeq		-0.2831	0.471	-0.720	0.393
	paper		-1.7317	0.000	-5.050	0.343
	boxes		(dropped)			
	trans		-0.5385	0.180	-1.340	0.402
	whlsl		-1.1131	0.001	-3.410	0.327
	rtail		-2.0442	0.000	-6.750	0.303
	meals		-0.7375	0.000	-3.910	0.188
	banks		-2.9901	0.000	-4.000	0.748
	insur		-1.9404	0.000	-6.100	0.318
	rlest		(dropped)			
	fin		-1.8955	0.000	-5.960	0.318
	other		-1.6352	0.453	-0.750	2.179
	books		-2.1605	0.000	-6.460	0.334
	fun		-0.4573	0.399	-0.840	0.542
	toys		-1.8767	0.000	-5.170	0.363
	smoke		-3.5495	0.000	-6.130	0.579
	beer		-0.7725	0.058	-1.890	0.408
	soda		-0.2368	0.512	-0.660	0.361
	food		-2.2246	0.000	-5.310	0.419
	agric		-3.7224	0.000	-8.410	0.443

Table 4-1
Full Results for Table 4

$$FOG_{it} = \beta_0 + \beta_1 Earnings_{it} + \beta_2 Pessimism_{it} + \beta_3 Beat_{it} + \beta_4 Earnings*Beat_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

N	15,663
Adj R^2	0.3627

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
	Intercept		15.3936	0.000	36.120	0.426
Variables of Interest	Earnings	-	-5.7169	0.000	-4.350	1.314
	Pessimism	+	0.7367	0.000	20.910	0.035
	Beat	-	-0.2068	0.017	-2.390	0.087
	Earnings*Beat	-	-6.5653	0.001	-3.420	1.921
Control Variables	MTB	+	0.0517	0.000	4.000	0.013
	DLW		0.0224	0.771	0.290	0.077
	SIZE	+	0.4021	0.000	5.050	0.080
	SI	-	-0.9012	0.335	-0.960	0.936
	AGE	-	-0.0150	0.000	-7.510	0.002
	INST	+	-0.5239	0.002	-3.170	0.165
	NGSEG	+	0.0019	0.404	0.830	0.002
	NBCOM	+	0.0156	0.015	2.420	0.006
Year Indicator Variables	Year98		0.4428	0.027	2.210	0.200
	Year99		0.3888	0.057	1.910	0.204
	Year00		0.4801	0.016	2.410	0.199
	Year01		0.6807	0.000	3.660	0.186
	Year02		0.9807	0.000	5.290	0.185
	Year03		1.2220	0.000	6.470	0.189
	Year04		0.9027	0.000	4.750	0.190
	Year05		0.8937	0.000	4.690	0.190
	Year06		1.2420	0.000	6.510	0.191
	Year07		1.3732	0.000	7.140	0.192

Table 4-1 Continued

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	hshld		-0.4781	0.093	-1.680	0.285
	clths		-4.4509	0.000	-13.710	0.325
	hlth		-0.9674	0.013	-2.490	0.389
	medeq		-1.7737	0.000	-4.560	0.389
	drugs		-0.1931	0.542	-0.610	0.317
	chems		1.0791	0.003	3.000	0.360
	bldmt		-1.9510	0.000	-5.040	0.387
	txtls		2.9773	0.000	7.080	0.421
	rubbr		-2.1239	0.000	-5.130	0.414
	cnstr		-1.4924	0.000	-4.150	0.359
	steel		-1.6358	0.000	-4.630	0.353
	autos		-0.3071	0.487	-0.700	0.441
	elceq		0.2458	0.461	0.740	0.334
	mach		-1.5529	0.000	-4.360	0.356
	fabpr		(dropped)			
	aero		0.7833	0.053	1.930	0.405
	ships		(dropped)			
	guns		0.7059	0.077	1.770	0.398
	gold		-2.0764	0.387	-0.870	2.398
	mines		-0.3729	0.877	-0.150	2.410
	coal		(dropped)			
	oil		-1.3840	0.000	-4.240	0.326
	util		-0.3503	0.298	-1.040	0.337
	telcm		0.5045	0.138	1.480	0.340
	persv		-2.5630	0.000	-7.590	0.338
	bussv		0.9800	0.001	3.220	0.304
	comps		-0.8794	0.004	-2.870	0.306
	chips		-1.2299	0.000	-3.880	0.317
	labeq		-0.2815	0.474	-0.720	0.393
	paper		-1.7412	0.000	-5.080	0.343
	boxes		(dropped)			
	trans		-0.5529	0.169	-1.370	0.402
	whlsl		-1.1132	0.001	-3.400	0.327
	rtail		-2.0487	0.000	-6.750	0.303
	meals		-0.7327	0.000	-3.890	0.188
	banks		-2.9598	0.000	-3.980	0.744
	insur		-1.9352	0.000	-6.070	0.319
	rlest		(dropped)			
	fin		-1.8990	0.000	-5.970	0.318
	other		-1.6805	0.368	-0.900	1.866
	books		-2.1615	0.000	-6.450	0.335
	fun		-0.4464	0.416	-0.810	0.548
	toys		-1.8755	0.000	-5.150	0.364
	smoke		-3.5609	0.000	-6.030	0.590
	beer		-0.7517	0.067	-1.830	0.410
	soda		-0.2008	0.577	-0.560	0.360
	food		-2.2398	0.000	-5.350	0.419
	agric		-3.7338	0.000	-8.690	0.430

Table 5-1
Full Results for Table 5

$$FOG_{it} = \beta_0 + \beta_1 Profit/Loss_{it} + \beta_2 Pessimism_{it} + \beta_3 MtBt_{it} + \beta_4 Profit/Loss*MtBt_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

					N	15,663
					Adj R^2	0.3549
	Variables	**Predicted Sign**	**Coefficient**	**p-value**	**t-statistic**	**Robust Std. Err.**
	Intercept		15.5536	0.000	34.920	0.445
	Profit/Loss	-	-0.3297	0.039	-2.060	0.160
Variables of Interest	Pessimism	+	0.7374	0.000	20.850	0.035
	MtBt	-	0.3190	0.155	1.420	0.224
	Profit/Loss*MtBt	-	-0.2814	0.228	-1.210	0.233
Control Variables	MTB	+	0.0271	0.027	2.220	0.012
	DLW		-0.0119	0.878	-0.150	0.078
	SIZE	+	0.4374	0.000	5.490	0.080
	SI	-	-1.3492	0.021	-2.310	0.584
	AGE	-	-0.0158	0.000	-7.840	0.002
	INST	+	-0.6315	0.000	-3.820	0.165
	NGSEG	+	0.0017	0.451	0.750	0.002
	NBCOM	+	0.0151	0.022	2.300	0.007
Year Indicator Variables	Year98		0.4252	0.034	2.130	0.200
	Year99		0.3829	0.060	1.880	0.204
	Year00		0.4843	0.015	2.430	0.200
	Year01		0.6857	0.000	3.670	0.187
	Year02		0.9785	0.000	5.280	0.185
	Year03		1.2255	0.000	6.490	0.189
	Year04		0.9203	0.000	4.850	0.190
	Year05		0.8831	0.000	4.650	0.190
	Year06		1.2042	0.000	6.330	0.190
	Year07		1.3556	0.000	7.050	0.192

Table 5-1 Continued

	Variables	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	hshld		-0.6131	0.034	-2.120	0.289
	clths		-4.5406	0.000	-13.790	0.329
	hlth		-0.9992	0.011	-2.550	0.392
	medeq		-1.9019	0.000	-4.800	0.396
	drugs		-0.2347	0.461	-0.740	0.318
	chems		1.3479	0.000	3.770	0.357
	bldmt		-1.8838	0.000	-4.840	0.390
	txtls		2.9550	0.000	7.040	0.420
	rubbr		-2.1389	0.000	-5.000	0.428
	cnstr		-1.5632	0.000	-4.340	0.360
	steel		-1.6737	0.000	-4.710	0.355
	autos		-0.2496	0.577	-0.560	0.448
	elceq		0.3623	0.290	1.060	0.342
	mach		-1.4777	0.000	-4.140	0.357
	fabpr		(dropped)			
	aero		0.9028	0.026	2.220	0.406
	ships		(dropped)			
	guns		0.7984	0.046	1.990	0.400
	gold		-2.2394	0.304	-1.030	2.177
	mines		-0.3658	0.867	-0.170	2.190
	coal		(dropped)			
	oil		-1.4025	0.000	-4.280	0.327
	util		-0.2657	0.431	-0.790	0.338
	telcm		0.5662	0.096	1.670	0.340
	persv		-2.4181	0.000	-7.060	0.343
	bussv		0.9868	0.001	3.230	0.305
	comps		-0.8536	0.006	-2.770	0.308
	chips		-1.1855	0.000	-3.720	0.319
	labeq		-0.2357	0.552	-0.590	0.396
	paper		-1.6752	0.000	-4.820	0.347
	boxes		(dropped)			
	trans		-0.4537	0.262	-1.120	0.404
	whlsl		-1.1070	0.001	-3.350	0.330
	rtail		-2.0710	0.000	-6.800	0.305
	meals		-0.7752	0.000	-4.100	0.189
	banks		-2.8270	0.000	-3.720	0.761
	insur		-1.8822	0.000	-5.900	0.319
	rlest		(dropped)			
	fin		-1.8442	0.000	-5.760	0.320
	other		-1.6346	0.489	-0.690	2.360
	books		-2.3251	0.000	-6.900	0.337
	fun		-0.3983	0.467	-0.730	0.548
	toys		-1.8416	0.000	-4.970	0.371
	smoke		-3.5373	0.000	-5.750	0.616
	beer		-0.7420	0.074	-1.790	0.415
	soda		-0.1667	0.641	-0.470	0.357
	food		-2.2265	0.000	-5.320	0.418
	agric		-3.6543	0.000	-8.380	0.436

Table 6-1A
Full Results for Table 6 Panel A

$$\Delta FOG_{it} = \beta_0 + \beta_1 \Delta Earnings_{it} + \beta_2 \Delta Pessimism_{it} + \beta_3 Earnings\ Indicator_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

N	12,942
Adj R^2	0.0829

	Variables	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
	Intercept		-0.5150	0.190	-1.310	0.393
Variables of Interest	ΔEarnings	-	-1.7799	0.021	-2.310	0.769
	Earning Indicator	-	-0.1017	0.035	-2.110	0.048
	ΔPessimism	+	0.5029	0.000	10.980	0.046
Control Variables	MTB	+	-0.0206	0.138	-1.490	0.014
	DLW		-0.0184	0.739	-0.330	0.055
	SIZE	+	0.0577	0.344	0.950	0.061
	SI	-	-0.6913	0.349	-0.940	0.738
	AGE	-	-0.0010	0.471	-0.720	0.001
	INST	+	-0.0986	0.401	-0.840	0.117
	NGSEG	+	-0.0002	0.912	-0.110	0.001
	NBCOM	+	-0.0013	0.799	-0.250	0.005
Year Indicator Variables	Year98		0.6708	0.005	2.800	0.240
	Year99		0.7239	0.002	3.090	0.235
	Year00		0.7520	0.000	3.510	0.214
	Year01		0.5713	0.005	2.810	0.203
	Year02		0.8138	0.000	4.030	0.202
	Year03		0.8944	0.000	4.430	0.202
	Year04		0.4979	0.013	2.490	0.200
	Year05		0.7360	0.000	3.680	0.200
	Year06		0.9293	0.000	4.680	0.199
	Year07		0.7076	0.000	3.590	0.197

Table 6-1A Continued

	Variables	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
Fama French 48 Industry Indicator Variables	agric		-0.0512	0.931	-0.090	0.594
	food		-0.2524	0.460	-0.740	0.341
	soda		0.0334	0.915	0.110	0.312
	beer		-0.0416	0.911	-0.110	0.372
	toys		-0.2711	0.540	-0.610	0.443
	smoke		-0.5523	0.146	-1.450	0.380
	fun		-0.0034	0.996	0.000	0.732
	other		(dropped)			
	books		-0.1434	0.613	-0.510	0.283
	fin		-0.2412	0.387	-0.870	0.279
	rlest		(dropped)			
	insur		-0.3003	0.289	-1.060	0.283
	banks		-0.1140	0.861	-0.170	0.653
	meals		-0.1562	0.435	-0.780	0.200
	rtail		-0.1902	0.486	-0.700	0.273
	whlsl		-0.2055	0.472	-0.720	0.286
	trans		-0.1846	0.552	-0.600	0.310
	boxes		-0.3336	0.269	-1.110	0.302
	paper		-0.1904	0.510	-0.660	0.289
	labeq		-0.4818	0.145	-1.460	0.331
	chips		-0.1597	0.554	-0.590	0.270
	comps		-0.1796	0.481	-0.700	0.255
	bussv		-0.1635	0.530	-0.630	0.261
	persv		-0.2031	0.502	-0.670	0.303
	util		-0.2753	0.354	-0.930	0.297
	telcm		-0.1777	0.589	-0.540	0.329
	oil		-0.1955	0.482	-0.700	0.278
	coal		(dropped)			
	mines		1.2948	0.356	0.920	1.403
	gold		-1.5390	0.266	-1.110	1.385
	guns		0.0096	0.984	0.020	0.478
	ships		(dropped)			
	fabpr		(dropped)			
	aero		-0.3003	0.375	-0.890	0.338
	mach		-0.1220	0.676	-0.420	0.292
	elceq		0.1249	0.684	0.410	0.307
	autos		-0.2124	0.501	-0.670	0.316
	steel		(dropped)			
	cnstr		-0.1916	0.529	-0.630	0.305
	rubbr		-0.6772	0.044	-2.010	0.337
	txtls		-0.0620	0.900	-0.130	0.494
	bldmt		-0.1395	0.612	-0.510	0.275
	chems		-0.1421	0.709	-0.370	0.381
	drugs		-0.1949	0.489	-0.690	0.281
	medeq		-0.1532	0.601	-0.520	0.293
	hlth		-0.1063	0.718	-0.360	0.295
	clths		-0.2695	0.393	-0.850	0.315
	hshld		-0.0984	0.705	-0.380	0.260

Table 6-1B

Full Results for Table 6 Panel B

$$\Delta Length_{it} = \beta_0 + \beta_1 \Delta Earnings_{it} + \beta_2 \Delta Pessimism_{it} + \beta_3 Earnings\ Indicator_{it} + \beta_5 YearDummies_{it} + \beta_6 IndustryDummies_{it} + \beta_7 Control\ Variables_{it} + \varepsilon_{it}$$

N	12,942
Adj R^2	0.2193

	Variable	Predicted Sign	Coefficient	p-value	t-statistic	Robust Std. Err.
	Intercept		-0.6281	0.000	-5.510	0.114
Variables of Interest	ΔEarnings	-	0.8022	0.039	2.070	0.388
	Earnings Indicator	-	-0.1086	0.000	-8.100	0.013
	ΔPessimism	+	-0.0635	0.000	-4.870	0.013
Control Variables	MTB	+	-0.0038	0.357	-0.920	0.004
	DLW		-0.0081	0.566	-0.570	0.014
	SIZE	+	0.0323	0.053	1.940	0.017
	SI	-	0.1421	0.200	1.280	0.111
	AGE	-	-0.0001	0.768	-0.290	0.000
	INST	+	0.0285	0.326	0.980	0.029
	NGSEG	+	-0.0004	0.355	-0.920	0.000
	NBCOM	+	-0.0015	0.214	-1.240	0.001
Year Indicator Variables	Year98		0.3542	0.000	5.440	0.065
	Year99		0.4954	0.000	7.340	0.068
	Year00		0.8023	0.000	12.410	0.065
	Year01		0.7395	0.000	11.970	0.062
	Year02		0.8011	0.000	13.300	0.060
	Year03		0.8692	0.000	14.490	0.060
	Year04		0.8357	0.000	14.020	0.060
	Year05		0.7400	0.000	12.620	0.059
	Year06		0.7498	0.000	12.690	0.059
	Year07		0.7513	0.000	12.800	0.059

Table 6-1B Continued

Fama French 48 Industry Indicator Variables	agric	0.4530	0.000	4.400	0.103
	food	-0.1511	0.102	-1.640	0.092
	soda	-0.0150	0.854	-0.180	0.081
	beer	0.0347	0.746	0.320	0.107
	toys	-0.1607	0.070	-1.810	0.089
	smoke	-0.0906	0.336	-0.960	0.094
	fun	0.3209	0.004	2.850	0.113
	other	(dropped)			
	books	-0.0715	0.385	-0.870	0.082
	fin	-0.1430	0.101	-1.640	0.087
	rlest	(dropped)			
	insur	-0.1023	0.229	-1.200	0.085
	banks	0.3408	0.005	2.830	0.121
	meals	-0.0045	0.953	-0.060	0.076
	rtail	-0.1309	0.116	-1.570	0.083
	whlsl	-0.1048	0.202	-1.280	0.082
	trans	0.0238	0.796	0.260	0.092
	boxes	-0.1473	0.076	-1.780	0.083
	paper	-0.1110	0.195	-1.300	0.086
	labeq	-0.1095	0.245	-1.160	0.094
	chips	-0.1326	0.102	-1.640	0.081
	comps	-0.0726	0.344	-0.950	0.077
	bussv	-0.0639	0.415	-0.820	0.078
	persv	-0.1482	0.102	-1.640	0.091
	util	-0.1793	0.040	-2.060	0.087
	telcm	-0.1538	0.165	-1.390	0.111
	oil	-0.0593	0.502	-0.670	0.088
	coal	(dropped)			
	mines	-0.5195	0.361	-0.910	0.569
	gold	0.4517	0.427	0.790	0.569
	guns	0.1997	0.287	1.060	0.188
	ships	(dropped)			
	fabpr	(dropped)			
	aero	-0.1221	0.176	-1.350	0.090
	mach	-0.0898	0.285	-1.070	0.084
	elceq	-0.1229	0.103	-1.630	0.075
	autos	-0.0605	0.490	-0.690	0.088
	steel	(dropped)			
	cnstr	-0.1405	0.095	-1.670	0.084
	rubbr	-0.0279	0.816	-0.230	0.120
	txtls	-0.0219	0.758	-0.310	0.071
	bldmt	-0.1015	0.222	-1.220	0.083
	chems	-0.0620	0.489	-0.690	0.090
	drugs	-0.0988	0.238	-1.180	0.084
	medeq	-0.0928	0.284	-1.070	0.087
	hlth	-0.1764	0.048	-1.980	0.089
	clths	-0.1069	0.249	-1.150	0.093
	hshld	0.0755	0.253	1.140	0.066