Empirical evidence on the consequences of competition-related 10-K language

Abstract

This paper examines whether investors use competition-related 10-K language when interpreting earnings information. The study focuses on the 1996–2009 period because it provides a useful historical setting in which competition-related 10-K language was more likely to capture firm-specific differences in competitive environments before such language became increasingly standardized and harmonized across firms over time. The sample comprises 25,039 U.S. listed firms that filed annual 10-K reports and reported earnings during fiscal years 1996–2009. The findings show that competition-related 10-K language strengthens investors' reactions to current earnings information but weakens their reactions to future earnings information. I also document that the effect of competition-related 10-K language on earnings responses depends on firm size, growth prospects, and profitability. Further analyses suggest that competition-related 10-K language became more harmonized over the sample period, and that its negative effect on future earnings response coefficients disappeared over time. By contrast, the positive effect on current earnings response coefficients is observed in both the pre- and post-SOX periods. Collectively, the results suggest that competition-related 10-K language is associated with both the firm's information environment and competition-related risk, and that investors' use of this information jointly with earnings information depends on the time horizon considered. This paper contributes to the literature on risk reporting and earnings informativeness by demonstrating that competition-related narrative, despite its potentially proprietary nature, is closely linked to firm risk and to investors' reactions to current and future earnings information.

Keywords: *competition-related 10-K language, risk reporting, earnings response coefficients, future earnings response coefficients, stock returns*

JEL classification: M41, M49

Data Availability: Data are available from the public sources cited in the text

1. Introduction

Product-market competition is a central feature of a healthy economy and a key determinant of firms' performance, risk, and long-run viability. Competition affects firms' market shares, pricing power, profitability, and incentives to innovate. Prior research suggests that greater competition can stimulate innovation and strategic adaptation, while weak competition may reduce managerial discipline and weaken incentives to improve business operations. Given the economic importance of competition, it is surprising that relatively little is known about whether and how investors use competition-related 10-K language when interpreting firms' earnings information. In particular, we know little about whether competition-related 10-K language affects investors' responses to current and future earnings news, and whether such effects vary across firms and reporting environments.

The existing accounting literature shows that corporate disclosures can "bring the future forward" by increasing the extent to which current stock returns reflect information about future earnings (Lundholm and Myers 2002). This insight is important because earlier research has also shown that earnings alone explain only a limited proportion of stock returns. As a result, attention has increasingly shifted toward the role of qualitative and non-financial information in helping investors interpret earnings signals. However, relatively little evidence exists on whether risk-related narrative disclosures that are closely connected to firms' underlying business risks alter investors' responses to earnings information. This gap is notable because such disclosures may provide important context that either strengthens or weakens the informativeness of reported earnings.

This study examines how competition-related 10-K language, as a specific form of risk-related narrative, is associated with investors' responses to earnings signals. Competition-related language is particularly relevant because it has a direct link to firms' competitive environment and competition-related risk. At the same time, this type of language may also reduce information asymmetry by helping investors better understand the firm's business conditions. Accordingly, the central question is whether competition-related 10-K language amplifies or attenuates the relation between stock returns and earnings information.

More specifically, I address three research questions. First, how is competition-related 10-K language associated with investors' responses to earnings information? Second, does the effect of

competition-related 10-K language on earnings responses depend on firm characteristics linked to firm risk, such as size, growth prospects, and profitability? Third, does the effect of competition-related 10-K language on earnings responses depend on the extent to which such language becomes harmonized across firms over time?

The theoretical prediction is not unambiguous. If competition-related 10-K language reduces information asymmetry and helps investors assess the firm's prospects more accurately, it should strengthen investors' responses to earnings information. In that case, earnings response coefficients should be higher when such language is more informative. By contrast, if competition-related 10-K language signals greater uncertainty about firms' future cash flows, profitability, or competitive position, investors may interpret earnings with greater caution, leading to weaker earnings response coefficients. Thus, whether competition-related 10-K language is interpreted primarily as risk-reducing or risk-increasing is ultimately an empirical question.

The study focuses on fiscal years 1996–2009. This period provides a useful historical setting in which competition-related 10-K language was more likely to reflect firm-specific differences in competitive environments before such language became increasingly standardized and harmonized across firms over time. This feature is important for the purposes of the study because greater cross-sectional variation makes it easier to observe whether investors attached value relevance to competition-related narrative when interpreting earnings signals. The sample includes 25,039 U.S. listed firm-year observations.

To capture competition-related 10-K language, I use a textual-analysis-based measure derived from firms' annual 10-K reports following Li, Lundholm, and Minnis (2013). To examine investors' reactions to earnings information, I employ the well-established returns–earnings framework used in prior earnings response coefficient research (e.g., Collins, Kothari, Shanken, and Sloan 1994), distinguishing between responses to current earnings and future earnings. Accounting data are obtained from COMPUSTAT, and stock return data are drawn from CRSP.
The results indicate that competition-related 10-K language is associated with investors' reactions to both current and future earnings information. On average, competition-related 10-K language strengthens investors' responses to current earnings news but weakens their responses to future earnings news. These findings suggest that this type of narrative may reduce information asymmetry in the short run while simultaneously signaling competitive uncertainty that makes future earnings less informative. Additional analyses show that the association between

competition-related 10-K language and earnings responses depends on firm size, growth prospects, and profitability.

The time-series evidence further suggests that competition-related 10-K language became increasingly harmonized over the sample period. As the level and variation of such language declined, its negative association with future earnings response coefficients weakened and eventually disappeared, whereas its positive association with current earnings response coefficients remained present in both the pre- and post-SOX periods. One interpretation of these results is that competition-related 10-K language was more firm-specific and informative in the earlier, less harmonized reporting environment, but became more standardized and therefore less useful as an indicator of firms' underlying competition-related risk over time.

This study contributes to the literature on risk reporting by showing that a specific type of risk-related narrative, namely competition-related 10-K language, is associated with how investors interpret earnings information. The paper also contributes to the earnings informativeness literature by showing that qualitative narrative disclosures do not merely enhance the incorporation of future earnings news into current returns; they may also attenuate the pricing of future earnings when the narrative signals heightened business risk. More broadly, the study highlights that non-financial disclosures with a clear link to firms' economic environment can play an important role in shaping the returns–earnings relation.

The findings also have practical implications for managers, investors, and regulators. In particular, they suggest that the informational value of risk-related narrative depends not only on the topic being disclosed but also on the extent to which the language remains firm-specific rather than becoming highly standardized. This insight should be relevant to regulators seeking to improve the usefulness of narrative risk reporting.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature and develops the hypotheses. Section 3 describes the variables and research design. Section 4 presents the sample and descriptive statistics. Section 5 reports the empirical results. Section 6 concludes.

2. Literature Review and Hypotheses

2.1. Evidence on Firm Risk Disclosure

Earlier research on risk disclosure mainly focused on the determinants of risk reporting (e.g., Roulstone 1999; Beretta and Bozzolan 2004; Linsley and Shrives 2006) and on the value relevance of market risk disclosures reported by U.S. firms (e.g., Rajgopal 1999; Linsmeier 2002; Jorion 2002; Lim and Tan 2007). More recent studies on the usefulness of risk disclosures show that the mandatory overall risk reviews required by the SEC are informative to investors (Kravet and Muslu 2013; Campbell, Chen, Dhaliwal, Lu, and Steele 2014) and that the level of detail in risk disclosures is also relevant (Hope et al. 2016). In addition, evidence from other countries with advanced risk reporting guidance suggests that high-quality risk disclosures can reduce information asymmetry (Miihkinen 2013).

The extant literature further shows that corporate governance is associated with both mandatory and voluntary risk disclosure practices (e.g., Abraham and Cox 2007; Elshandidy and Neri 2015; Martikainen et al. 2015). Risk disclosures are therefore an integral part of corporate governance and reflect choices made by company managers and boards of directors. They help firms communicate to external stakeholders how management perceives the firm's risks, opportunities, and operating environment.

2.2. Competition and Competition-Related 10-K Language

The benefits of market competition are well documented in the literature. Hicks (1935) famously suggested that "the best of all monopoly profits is a quiet life," implying that competition disciplines management and creates incentives to improve firm performance. Bertrand and Mullainathan (2003) provide empirical evidence consistent with this argument by showing that managers may be inclined to enjoy the benefits of a "quiet life" when they are not effectively monitored. From this perspective, information related to competition is important because it helps stakeholders assess how management performs within the firm's competitive environment.

Competition-related information is also important because prior research shows that innovation activity increases with competition (Aghion, Bloom, Blundell, Griffith, and Howitt 2005). This provides an additional reason to expect competition-related 10-K language to be useful to investors and other stakeholders. Such language may help users of financial reports better understand the future risks and opportunities facing the firm.

2.3. Theory on Earnings Response Coefficients and Firm Risk

According to theory, the effect of an earnings innovation on stock returns depends on the present value of revisions in expected future earnings (Kormendi and Lipe 1987). As a result, firm risk is expected to influence share prices. This intuition can be illustrated by the following simplified valuation relation:

$$P/E = 1/r \qquad (1)$$

$$\longleftrightarrow \quad P = E/r$$

where P denotes the share price, E is earnings per share, and r is the discount rate reflecting the riskiness of the firm

The earnings response coefficient (ERC) captures the magnitude of investors' reactions to earnings information. Following this intuition, ERC can be expressed as increasing when the discount rate declines:

$$ERC = 1+1/r \qquad (2)$$

Kormendi and Lipe (1987) argue that investors' responses to accounting information are expected to be stronger when a higher proportion of unexpected current earnings changes is perceived to be persistent and when firm risk is lower. Thus, the magnitude of the ERC is negatively related to the discount rate, which reflects the firm's riskiness and is used to discount expected future cash flows to the present.

Risk-related disclosures can influence the market's response to accounting information in at least two ways. First, they may provide new information about risks affecting the firm's future cash flows. Greater awareness of these risks may lead investors to revise their expectations about future cash flows either upward or downward. Second, even if expected future cash flows remain unchanged, risk disclosures may reduce information asymmetry and lower information risk

surrounding the firm. In that case, the discount rate used in valuation decreases, which has a positive effect on firm value.

Prior research suggests that high-quality risk reporting can increase the usefulness of earnings information by improving the predictability of the underlying earnings process (Swaminathan 1991). Collins and Kothari (1989) also show that firm riskiness affects investors' responses to earnings information. In settings with stronger mandatory disclosure requirements, investors may have greater incentives to rely on risk-related disclosures because those disclosures are produced in a more regulated reporting environment (Jorgensen and Kirschenheiter 2003). In this respect, the U.S. setting is particularly relevant, given the extensive regulation of market risk disclosures and the SEC's requirements for firms to report overall business risks.

2.4. Evidence on Current and Future Earnings Response Coefficients

n classical return–earnings studies, annual stock returns are typically related to contemporaneous earnings changes (Lev 1989). However, prior literature shows that investors often respond only weakly to earnings releases that contain historical and audited earnings information for the preceding fiscal year (e.g., Lev 1989; Ou and Penman 1989; Easton and Harris 1991). One reason is that stock prices incorporate part of the earnings information before it is formally reported.

To address the limitations of basic return–earnings models, more sophisticated frameworks have been developed. Collins et al. (1994) show that the low contemporaneous return–earnings association can be explained partly by the lack of timeliness in earnings and by value-irrelevant noise. They provide evidence that current and future earnings together explain approximately three to six times as much annual return variation as current earnings alone. They also develop a more refined methodology for estimating future earnings response coefficients.

Using a similar framework, Lundholm and Myers (2002) examine how disclosures can "bring the future forward." They study how managers' disclosure choices shape the relation among current annual stock returns, current annual earnings, and future earnings. Their evidence suggests that investors are able to incorporate earnings-related future information into stock prices already during the current period. This finding highlights the important role that disclosures can play in firm valuation.

Ettredge et al. (2005) analyze future earnings in a standard-setting context using the same methodology. They show that SFAS No. 131 on segment disclosures benefited investors by providing more information about expected future earnings. Importantly, they use the concept of the forward earnings response coefficient (FERC), which they define as the association between current-year returns and next-year earnings.

Tucker and Zarowin (2006) also apply this framework to examine whether income smoothing improves earnings informativeness. They provide evidence that the stock prices of higher-smoothing firms incorporate more information about future earnings than those of lower-smoothing firms. Their findings suggest that income smoothing does not necessarily garble earnings information but may instead improve the informativeness of current and past earnings about future earnings and cash flows.

Finally, Choi, Myers, Zang, and Ziebart (2011) use the same methodology to examine whether management EPS forecasts help investors incorporate information about future earnings into current stock prices. They show that quarterly and short-term earnings forecasts assist investors in estimating future earnings. More specifically, they find that forecasting firms have higher future earnings response coefficients, and that these coefficients are higher when forecasts are more precise or more frequent.

Taken together, these studies use a framework that makes it possible to examine in greater detail the relation between current returns and future earnings. Within this framework, it is also possible to show that more informative disclosures can enhance the extent to which returns reflect future earnings information.

2.5. Competition-Related 10-K Language and Earnings Response Coefficients

Disclosures are an important part of corporate governance. Agency theory suggests that managers may have incentives that differ from those of shareholders, which creates monitoring costs. Increased disclosure can reduce these costs by making it easier for investors to monitor the firm. Greater transparency may also reduce adverse selection. At the same time, managers and boards must weigh the benefits of disclosure against its potential costs. As Verrecchia (1983) shows in his model of discretionary disclosure, proprietary costs can materially affect the net benefits of

disclosure. Accordingly, each firm has a threshold beyond which additional disclosure may become more costly than beneficial. From this perspective, competition-related 10-K language can be viewed as a form of risk-related narrative because it has a direct link to the firm's competitive environment and competition-related risk.

The effect of competition-related 10-K language on earnings response coefficients is not obvious a priori, although theory suggests that lower risk should be associated with higher ERCs (Kormendi and Lipe 1987; Collins and Kothari 1989). On the one hand, as suggested by Lundholm and Myers (2002) and by the theory of information risk, informative disclosures may "bring the future forward" by helping investors assess future earnings earlier and more accurately. On the other hand, competition-related 10-K language may also provide investors with information about heightened business risk, causing them to interpret earnings more cautiously and to apply a higher discount rate in valuation. The purpose of this paper is to examine which of these forces dominates on average. Because the theoretical predictions point in competing directions, the issue is ultimately an empirical question.

H1: Competition-related 10-K language is associated with investors' response to current and future earnings information.

Prior studies of corporate disclosure consistently show that larger firms tend to disclose more transparently on average (e.g., Cooke 1989; Eng and Mak 2003; Brammer and Pavelin 2006). This suggests that investors may have greater information needs with respect to smaller firms, in which case competition-related 10-K language may be especially useful in shaping their risk assessments. At the same time, competition may also be particularly important for larger firms if they have more rents, market share, or strategic position at stake. Moreover, the previously documented size effect in disclosure research does not necessarily map directly onto competition-related 10-K language. Consequently, competition-related 10-K language may be informative for investors in both small and large firms, but the magnitude and direction of its association with earnings responses may vary with firm size.

H2: The association between competition-related 10-K language and investors' responses to current and future earnings information varies with firm size.

Growth prospects are also closely related to competition and risk and may influence earnings response coefficients (Collins and Kothari 1989). Growth is linked to innovation, and prior research shows that competition is associated with innovation activity (Aghion et al. 2005). For firms with strong growth opportunities, competitive pressures may have particularly important implications for firm value because the failure to sustain competitive advantage may lead to substantial downward revisions in expected future performance. Investors may therefore react more strongly to competition-related 10-K language in growth firms than in value firms.

H3: The association between competition-related 10-K language and investors' responses to current and future earnings information varies with growth prospects.

Firm profitability is another fundamental determinant of future earnings. In the long run, only profitable firms can generate sustainable dividend-paying capacity. Profitability may also provide a buffer against the adverse effects of competition. Low profitability is a risk characteristic that makes the firm more vulnerable to competition-related shocks. Loss firms, in particular, face greater uncertainty and often higher financial distress risk. In such settings, competition-related 10-K language may lead investors to interpret earnings information more cautiously.

H4: The association between competition-related 10-K language and investors' responses to current and future earnings information varies with firm profitability.

Finally, earnings response coefficients exhibit temporal variation (Collins and Kothari 1989). Investors' willingness and ability to use competition-related 10-K language jointly with earnings information may also vary over time. One potential reason is the adoption of the Sarbanes-Oxley Act of 2002, which increased firms' disclosure responsibilities and heightened scrutiny over financial reporting and governance. Under the post-SOX reporting environment, investors may view competition-related 10-K language as more credible because disclosures are subject to stronger oversight, more formal internal control processes, and greater board-level accountability.

At the same time, the post-SOX period may also involve greater harmonization of firms' reporting practices. If competition-related 10-K language becomes more standardized across firms, it may become less firm-specific and therefore less informative. In a less regulated environment,

by contrast, variation in such language may more directly reflect management's disclosure choices, the firm's underlying competitive conditions, and perhaps even broader aspects of governance quality. Because these arguments point in different directions, the effect of SOX on the relation between competition-related 10-K language and earnings responses is again an empirical question.

H5: The association between competition-related 10-K language and investors' responses to current and future earnings information varies between the pre- and post-SOX periods.

3. Variables and Methods

3.1 Empirical Indicator of Competition-Related 10-K Language

Several prior studies implicitly assume that disclosure quantity can serve as a proxy for disclosure quality (see Botosan 2004, 290). In this study, I follow Li et al. (2013) and use their text-based measure to capture competition-related 10-K language. More specifically, Li et al. (2013) construct a measure based on the frequency of competition-related words in firms' annual 10-K filings.

The measure counts the number of occurrences of the following words in the 10-K report: *competition*, *competitor*, *competitive*, *compete*, and *competing*, including plural forms where applicable. To avoid capturing references that explicitly downplay competitive pressure, observations are excluded when the focal word is preceded within three words by *not*, *less*, *few*, or *limited*. The resulting raw count is then scaled by the total number of words in the 10-K filing. The final measure is expressed as the number of competition-related words per 1,000 words in the annual 10-K report.

$$DISC_{t-1} = (\text{net number of competition words})/((\text{total number of words in 10-K})/1000) \quad (3)$$

Li et al. (2013) document substantial variation in the measure, and show that this variation reflects both within-industry and across-industry differences. This suggests that competition-related 10-K language is not merely boilerplate, but instead varies meaningfully according to firm- and industry-specific conditions. In addition, the timing of these disclosures is important. I use

competition-related 10-K language from the 10-K filing for fiscal year $t-1$, which is typically published approximately three months after the firm's fiscal year-end. This is the most recent competition-related 10-K information available to investors at the time they interpret current and future earnings information.

3.2 Return/Earnings Regressions

I use association tests to examine the relation between competition-related 10-K language and investors' responses to current and future earnings information. More specifically, I follow the established return–earnings methodology that makes it possible to include past, current, and future earnings in the same model (Collins et al. 1994; Lundholm and Myers 2002; Ettredge et al. 2005; Tucker and Zarowin 2006; Choi et al. 2011). Accordingly, I regress the cumulative 12-month buy-and-hold return on the firm's past, current, and future earnings for periods $t-1$, t, $t+1$, $t+2$, and $t+3$. In addition, I control for cumulative 12-month buy-and-hold returns for periods $t+1$, $t+2$, and $t+3$. In the first regression table (Table 5), future earnings and future returns are aggregated and denoted by the subscript $t3$. The equations are as follows:

$$RET_{it} = \beta_0 + \beta_1 EA_{it-1} + \beta_2 EA_{it} + \beta_3 EA_{it3} + \beta_4 RET_{it3} + e_{it} \quad (3a)$$

$$RET_{it} = \beta_0 + \beta_1 EA_{it-1} + \beta_2 EA_{it} + \beta_3 EA_{it+1} + \beta_4 EA_{it+2} + \beta_5 EA_{it+3} + \beta_6 RET_{it+1} + \beta_7 RET_{it+2} + \beta_8 RET_{it+3} + e_{it} \quad (3b)$$

In the equations, β denotes the regression coefficients to be estimated, and e denotes the regression residual. The subscripts i and t refer to firm and year, respectively. All regressions are estimated using ordinary least squares (OLS). Standard errors are adjusted for clustering by both firm and year (see Petersen 2009). RET_{it} is the dependent variable in the regressions. It is measured as the firm's 12-month cumulative buy-and-hold return in year t, over the 12-month period ending three months after the firm's fiscal year-end (cf. Lundholm and Myers 2002; Tucker and Zarowin 2006). EA_{it-1}, EA_{it}, EA_{it+1}, EA_{it+2}, EA_{it+3}, and EA_{t3} are measured using earnings before extraordinary items (Compustat item IBCOM). EA_{it3} represents aggregate earnings for years t1 to t3, and RET_{t3}

is the cumulative compounded 36-month buy-and-hold return for years t1 to t3. Each annual return measurement period ends three months after the firm's fiscal year-end. All earnings measures are deflated by the market value of equity measured three months after the fiscal year-end of year (t-1), that is, at the beginning of the return measurement period) (Lundholm and Myers 2002; Ettredge et al. 2005).

Following Tucker and Zarowin (2006), I predict that the coefficient on past earnings (β_1) is negative, the coefficient on current earnings ($\beta 2$) is positive, and the coefficient on future earnings ($\beta 3$ *in regression 3a)* is positive. In addition, I predict that the coefficient on future returns ($\beta 4$ *in regression 3a*) is negative. To address the research question, I add the variable capturing competition-related 10-K language (*DISC*) to the baseline models and interact it with all model components. In addition, I include the following control variables in the model:

$$RET_{it} = \beta_0 + \beta_1 EA_{it-1} + \beta_2 EA_{it} + \beta_3 EA_{it3} + \beta_4 RET_{it3} + \beta_5 DISC_{t-1} + \beta_6 DISC_{t-1} * EA_{it-1} + \beta_7 DISC_{t-1} * EA_{it} + \beta_8 DISC_{t-1} * EA_{it3} + \beta_9 DISC_{t-1} * RET_{it3} + CONTROLS + e_{it} \quad (4a)$$

$$RET_{it} = \beta_0 + \beta_1 EA_{it-1} + \beta_2 EA_{it} + \beta_3 EA_{it+1} + \beta_4 EA_{it+2} + \beta_5 EA_{it+3} + \beta_6 RET_{it+1} + \beta_7 RET_{it+2} + \beta_8 RET_{it+3} + \beta_9 DISC_{t-1} * EA_{it-1} + \beta_{10} DISC_{t-1} * EA_{it} + \beta_{11} DISC_{t-1} * EA_{it+1} + \beta_{12} DISC_{t-1} * EA_{it+2} + \beta_{13} DISC_{t-1} * EA_{it+3} + \beta_{14} DISC_{t-1} * RET_{it+1} + \beta_{14} DISC_{t-1} * RET_{it+2} + \beta_{15} DISC_{t-1} * RET_{it+3} + CONTROLS + e_{it} \quad (4b)$$

In this study, I am particularly interested in coefficients β_7 and β_8 in regression 4a which capture how competition-related 10-K language is associated with investors' reactions to current earnings information in period (t) and to future earnings information over periods (t+1) to (t+3). In Regression 4b, the main coefficients of interest are β_{10},β_{11}, β_{12}, and β_{13}, which indicate how competition-related 10-K language is associated with investors' reactions to earnings information in periods (t), (t+1), (t+2), and (t+3), respectively. If investors interpret competition-related 10-K language as reducing (increasing) firm risk, these coefficients are expected to be positive (negative). Statistically significant coefficients would provide evidence that investors use competition-related 10-K language when evaluating the risk associated with current and future earnings information. These coefficients also help assess the extent to which competition-related

10-K language can "bring the future forward" (cf. Lundholm and Myers 2002). More broadly, the accounting literature still provides limited evidence on whether investors' risk perceptions vary across time horizons. Accordingly, it is not clear a priori how investors interpret competition-related 10-K language jointly with earnings signals referring to different future periods.

In addition, I control for firm size, growth prospects, and profitability. Firm size (*SIZE*) is measured as the natural logarithm of total assets at the end of fiscal year t-1. Prior literature identifies firm size as one of the most important determinants of corporate disclosure levels (e.g., Cooke 1989; Lang and Lundholm 1993; Brammer and Pavelin 2006). More recent risk disclosure research also documents a positive association between firm size and the quality of risk disclosure (Linsley and Shrives 2006; Dobler et al. 2011; Miihkinen 2012). In this study, firm size serves as a proxy for the broader information environment and for the extent of other disclosures provided by the firm in addition to competition-related 10-K language.

Firm growth prospects (*BM*) are measured using the book-to-market ratio at the end of fiscal year (t-1). This variable is expected to capture the extent to which the firm's stock price reflects expectations about future earnings relative to its book value. Both *SIZE* and *BM* are commonly used as predictors of returns in prior literature (e.g., Fama and French 1992). Finally, I use return on assets (*ROA*) as a measure of profitability to capture the firm's ability to generate earnings from its asset base. It is calculated as earnings before interest and taxes divided by total assets. Table 1 summarizes the definitions of all variables.[1]

(Table 1 about here)

4. Sample and Descriptive Statistics

4.1. Target Sample

The research population consists of 243,232 firm-year observations available in COMPUSTAT for the period 1994–2014. I lose 23,071 observations when merging these data with the CRSP link table. A further 5,116 observations are lost because earnings data are missing for some firm-years.

[1] In the empirical tests, I use non-winsorized values for $DISC_{t-1}$. All other variables are winsorized at the 1st and 99th percentiles.

The largest reduction in sample size occurs when the data are merged with CRSP return data, resulting in the loss of 97,763 observations and leaving 117,282 observations. An additional 50,113 observations are lost in the construction of the earnings and return variables, reducing the sample to 67,169 firm-year observations. Finally, merging the data with the competition-related 10-K language scores from Li et al. (2013) yields 33,479 observations. After excluding a further 8,651 firm-year observations because of missing control variables, the final sample consists of 25,039 firm-year observations covering fiscal years 1996–2009.

(Table 2 about here)

4.2. Summary Statistics

Table 3, Panel A, reports the descriptive statistics for the variables in the pooled sample. The number of observations is 25,039, which is the same sample used in the main analyses. RET_t has positive mean and median values. The difference between the mean and the median suggests some skewness in the variable (mean = 0.193; median = 0.069). The wide range between the minimum and maximum values further indicates substantial variation in returns.

The earnings variables (EA_{t-1}, EA_t, EA_{t+1}, EA_{t+2}, EA_{t+3}) also exhibit some left-skewness, as their median values exceed their mean values. This suggests that a subset of firms in the sample are unprofitable or report losses. The competition-related 10-K language measure ($DISC_{t-1}$) is consistent with Li et al.'s (2013) observation that there is substantial variation in firms' use of competition-related language. The mean and median values are 0.569 and 0.423, respectively. The minimum value is 0.000 and the maximum value is 4.887. With regard to the control variables, the sample appears reasonably well distributed in terms of firm size. The mean value of *BM* is 0.613, indicating that, on average, firms' market values are approximately twice their book values of equity. The mean and median values of *ROA* are very close to each other, suggesting that the distribution of this variable is relatively symmetric. However, there is still considerable variation between the minimum and maximum values of ROA.

(Table 3A about here)

Table 3, Panel B, reports the yearly values of competition-related 10-K language. Interestingly, the mean, median, and maximum values exhibit a declining trend over time. At the

same time, the standard deviation of the measure also decreases, indicating that competition-related 10-K language became less dispersed across firms during the sample period. One possible explanation is that the post-SOX reporting environment, which began to affect corporate governance and disclosure practices after 2002, contributed to the decline and increasing harmonization of competition-related 10-K language. This interpretation is also consistent with Brown and Tucker's (2011) finding that narrative reporting became less informative over time even as the overall length of annual reports increased. Their sample period, which covers 1997–2006, closely overlaps with the period examined in this study. More broadly, this pattern suggests that competition-related 10-K language may have been particularly relevant to investors in the pre-SOX period, when greater cross-sectional variation made such language more likely to capture firm-specific differences.

(Table 3B about here)

5. Empirical Results

5.1 Correlation Analysis

Table 4 reports the Pearson correlation coefficients for the variables. The number of observations is 25,039 for all correlations. The earnings variables are significantly correlated with current returns (RET_t) with the expected signs. In addition, current returns are negatively correlated with the aggregate future return (RET_{t3}) as well as with returns for periods (t+1), (t+2), and (t+3) as expected. $DISC_{t-1}$ is not significantly correlated with returns, suggesting that competition-related 10-K language, by itself, is not directly priced as a risk factor. Alternatively, it may capture omitted firm characteristics that are associated with firm valuation rather than directly reflected in returns. Larger firms earn lower returns on average (r=-0.05), and firms with higher book-to-market ratios also earn lower returns (r=-0.22). This pattern differs somewhat from the findings of Fama and French (1992), particularly with respect to the role of growth prospects in explaining returns. One possible explanation is the difference in sample periods and sample composition. Finally, past profitability (*ROA*) is negatively correlated with current returns.

Interestingly, the correlation coefficient between firm size (*SIZE*) and $DISC_{t-1}$ is negative and significant (r=-0.26). This finding suggests that, on average, larger firms use less competition-

related 10-K language. One possible explanation is that larger firms may have more proprietary information at stake and therefore stronger incentives to limit discussion of competitive conditions. A second, albeit more tentative, explanation is that larger firms may face less intense product-market competition than smaller firms, which would reduce the relevance of competition-related 10-K language in their annual reports. This finding is particularly interesting in the broader corporate disclosure literature, which generally shows that larger firms disclose more extensively overall (e.g., Cooke 1989; Lang and Lundholm 1993; Brammer and Pavelin 2006).

Collectively, the correlation coefficients among the explanatory variables suggest that multicollinearity is unlikely to threaten the reliability of the main results. The highest correlation coefficient is 0.49, observed between EA_t and EA_{t-1}. In addition, the low variance inflation factor (VIF) values provide further evidence that multicollinearity is not a material concern.

(Table 4 about here)

5.2 Multivariate Results: Main Regressions

Table 5 reports the results on the association between competition-related 10-K language and current and future earnings response coefficients, as specified in Equation (3a). All regression models are statistically significant. The number of observations is 25,039, and the adjusted R^2 ranges from 15.7% to 19.4%, depending on the model. This level of explanatory power is broadly comparable to that reported in Ettredge et al. (2005), slightly lower than that in Lundholm and Myers (2002), and higher than that in Tucker and Zarowin (2006).

Past earnings (EA_{t-1}) and aggregate future returns (Ret_{t3}) are negatively and significantly related to current returns, whereas current earnings and aggregate future earnings are positively and significantly associated with returns. All coefficient signs are as expected (e.g., Tucker and Zarowin 2006). $DISC_{t-1}$ is positively, but not significantly, associated with returns. The interaction term $DISC_{t-1} * EA_t$ is positive and significant, whereas the interaction term $DISC_{t-1} * EA_{t3}$ is negative and significant. These results remain robust after the inclusion of all control variables. The coefficient on SIZE is negative but not statistically significant. By contrast, BM and ROA have

negative and statistically significant coefficients.[2] These findings suggest that, on average, growth firms and firms with lower profitability earned higher current returns during the sample period.

Overall, the evidence suggests that investors' reactions to current earnings information are stronger when firms use more competition-related 10-K language. By contrast, when current competition-related 10-K language is interpreted jointly with future earnings information, it has a moderating effect on investors' earnings responses. This finding is consistent with H1, which predicts that investors use competition-related 10-K language when interpreting current and future earnings information.

The results also suggest that investors' perceptions of competition-related risk may vary with the time horizon of the earnings information. Competition-related 10-K language may reflect greater awareness of the firm's competitive environment and thereby reduce information asymmetry in the short run. Over shorter horizons, investors may view the transparency benefits of such language as more important than the risks associated with competition itself. Over longer horizons, however, investors' perceptions may change, as future earnings are subject to greater uncertainty. As a result, investors may react more cautiously to future earnings signals when they are interpreted jointly with more extensive competition-related 10-K language.

(Table 5A about here)

Table 5B reports the results for Equation (3b), in which future earnings and future returns are disaggregated. These results provide additional insight into how the role of competition-related 10-K language changes across different earnings horizons. More specifically, the coefficients on $DISC_{t-1} * EA_{t+2}$ and $DISC_{t-1} * EA_{t+3}$ are negative and statistically significant. This finding suggests a clear difference between earnings signals relating to the current fiscal year and those relating to more distant future periods beyond year (t+1).

(Table 5B about here)

Overall, the results are consistent with the view that investors consider competition-related 10-K language to be value-relevant information that provides important context for the

[2] All significances of the reported tables in this paper are based on two-sided tests.

interpretation of current and future earnings. The findings suggest that competition-related 10-K language conveys meaningful information about firms' competition-related risk, which is consistent with H1. Interestingly, over shorter horizons, the dominant effect appears to be the ability of competition-related 10-K language to reduce information asymmetry and to signal that the firm is attentive to its competitive environment. At the same time, investors may react more selectively to future earnings signals because competition-related information also highlights the greater uncertainty surrounding longer-term performance.

These results should also be interpreted in light of the low current and future earnings response coefficients documented in prior literature. One possible explanation is that earnings response coefficient estimates are inherently noisy because market expectations of earnings are difficult to measure precisely at the beginning of the return window. Another explanation is that investors interpret earnings jointly with a broad set of complementary qualitative disclosures. In that case, a framework focusing only on earnings information provides an incomplete picture and may understate the response coefficients associated with earnings. This paper suggests that incorporating a specific type of qualitative narrative, namely competition-related 10-K language, helps provide a richer understanding of the return–earnings relation. More broadly, the evidence indicates that recognizing disclosure topics with potentially proprietary content may improve our understanding of how investors interpret earnings information.

5.3. Cross-Sectional Effects of Firm Size, Growth Prospects, and Profitability

Next, I estimate the regressions separately for subsamples constructed on the basis of the control variables. Specifically, I divide the full sample using the lower and upper quartiles of each variable as the partitioning criterion and compare the following groups: small firms versus large firms, low book-to-market firms versus high book-to-market firms, and low-profitability firms versus high-profitability firms.[3]

The regression results are reported in Table 6A. The size of the subsamples ranges from 3,633 to 9,050 observations, and the adjusted R-square ranges from 14.20% to 37.00%. The results

[3] I use the full Compustat sample (N = 150,000) to calculate the lower and upper quartile cutoffs. The resulting lower/upper quartile values for the control variables are as follows: SIZE (4.26/7.41), BM (0.00/0.57), ROA (-0.008/0.119).

indicate that the effect of current earnings on current returns is positive among small firms but negative among large firms. In the large-firm subsample, earnings for periods (t+1) and (t+2) have a positive association with current returns. One possible explanation is that larger firms are followed more closely by investors and analysts, so a greater portion of current earnings information may already be reflected in stock prices at the beginning of the measurement period, leaving newly impounded information to relate more strongly to future earnings.

It is notable, however, that competition-related 10-K language moderates investors' negative reactions to current earnings information among larger firms, as indicated by the positive and statistically significant coefficient on $DISC_{t-1} * EA_t$. Among the smallest firms, by contrast, competition-related 10-K language does not appear to strengthen investors' reactions to current earnings signals. Over longer horizons, competition-related 10-K language is interpreted as risk-increasing in both subsamples, as reflected in the negative and statistically significant coefficient on $DISC_{t-1} * EA_{t+2}$. Taken together, these results, along with the earlier finding that larger firms use less competition-related 10-K language on average, suggest that although larger firms may be particularly sensitive to competition-related information, investors view this type of language as risk-reducing in the short run. Overall, the findings are consistent with H2.

With regard to firms' growth prospects, I find evidence that competition-related 10-K language influences investors' interpretations particularly among firms with high growth prospects, as indicated by the positive and statistically significant coefficient on $DISC_{t-1} * EA_t$. This finding suggests that uncertainty and competitive pressure may be integral features of growth firms' business environments, and that additional competition-related information provides useful confirmation of the firm's current position by reducing information asymmetry. For value firms, by contrast, competition-related 10-K language appears to provide less reduction in information risk related to current earnings, and current earnings response coefficients are therefore lower. Overall, the results are consistent with H3 and suggest that the effect of competition-related information on investors' reactions depends on firms' growth prospects. More broadly, this type of qualitative information appears to reduce investors' uncertainty more strongly in the subgroup of firms with high growth prospects.

Firm profitability has a substantial effect on earnings response coefficients. In the low-profitability subsample, the current ERC is negative (coef. -0,579), whereas in the high-profitability subsample it is positive (coef. = 1.497). In addition, future earnings response

coefficients are considerably higher in the profitable firm subsample. This finding suggests that the problem of low ERCs documented in prior literature is less pronounced among profitable firms.

Interestingly, the results also show that investors' reactions to the current and future earnings information of profitable firms are not materially affected by competition-related 10-K language. By contrast, investors appear to interpret competition-related 10-K language, on average, as risk-increasing among less profitable firms. One reason may be that the lower-quartile cutoff for ROA is negative, implying that this subsample includes firms with relatively weak past performance. In this group, lower past profitability is associated with a stronger negative relation between current earnings and returns. However, this effect is moderated by the level of competition-related 10-K language, as indicated by the positive and statistically significant coefficient on $DISC_{t-1} * EA_t$. The positive future earnings response coefficients in this subsample are also moderated when firms use more competition-related 10-K language. Overall, these results support H4 and show that the magnitude and direction of investors' reactions to earnings information vary with firm profitability.[4]

(Table 6A about here)

Table 6B provides additional insight into the role of profitability in shaping the results. The findings show that current and future earnings response coefficients are substantially higher in the subsample consisting only of firms with non-negative earnings in fiscal year t. The current earnings response coefficient for the full sample of profit firms is 3.178. For the high-profit and low-profit subsamples, the corresponding coefficients are 3.317 and 3.700, respectively. In these subsamples, earnings response coefficients gradually decline as the horizon shifts from current earnings to future earnings signals (EA_{t+1}, EA_{t+2}, EA_{t+3}).

Within these profit-making subsamples, competition-related 10-K language appears to be interpreted as risk-reducing for earnings signals relating to fiscal year (t+1). This effect is somewhat stronger among the less profitable firms, as indicated by the larger and more statistically significant coefficient on $DISC_{t-1} * EA_{t+1}$. One interpretation is that among the most profitable firms there is less information asymmetry concerning competition-related risk. Alternatively, high profitability may make these firms less vulnerable to competitive pressure and therefore reduce

[4] The main test results are more significant if they are run without clustering the standard errors by firm and time.

investors' interest in competition-related information. Competition-related 10-K language is also associated with investors' reactions to earnings signals relating to fiscal year (t+3), as shown by the negative interaction term. Again, this effect is more pronounced in the lower-profitability subgroup, which is consistent with the view that these firms are seen as more vulnerable to competition-related risk.

For loss firms, the current earnings response coefficients are negative and statistically significant, suggesting that firms with larger losses in fiscal year $t$experienced higher contemporaneous returns. At the same time, the future earnings of loss firms are positively associated with current returns. Interestingly, future earnings response coefficients are higher in the low-loss subgroup, suggesting that current returns capture future earnings information more effectively in this group than among high-loss firms. One possible explanation is that larger current losses signal greater uncertainty about the future, making investors more skeptical when interpreting future earnings signals. This interpretation is also supported by the positive and statistically significant coefficient on $DISC_{t-1}$ * EA_t, which suggests that the negative relation between current earnings and current returns is moderated when a high-loss firm uses more competition-related 10-K language. More broadly, this finding suggests that investors view loss firms with more extensive competition-related 10-K language as riskier and are therefore less willing to interpret negative earnings information favorably.

(Table 6B about here)

5.4. The Effect of Increasing Harmonization in Competition-Related 10-K language

Tables 7A and 7B report the main results separately for the pre- and post-SOX periods.[5] In the full models, the sample size and adjusted R-square are 14,515 and 18.80%, respectively, for the pre-SOX period, and 10,524 and 29.50%, respectively, for the post-SOX period. The main finding that competition-related 10-K language increases current earnings response coefficients remains unchanged across both periods. However, in the post-SOX period, competition-related 10-K

[5] Pre-SOXLEY years include fiscal years 1996-2002 and post-SOXLEY years include fiscal years 2003-2009.

language is less strongly associated with future earnings signals, as indicated by the non-significant coefficients on $DISC_{t-1} * EA_{t+1}$, $DISC_{t-1} * EA_{t+2}$, $DISC_{t-1} * EA_{t+3}$. This finding suggests that, in the post-SOX period, investors no longer appear to interpret competition-related 10-K language as a risk-increasing factor when assessing future earnings information. One possible interpretation is that the post-SOX regulatory environment brought greater rigor and transparency to firms' corporate governance and reporting practices, leading investors to view competition-related 10-K language more as part of general reporting policy than as a firm-specific signal of heightened competition-related risk.

In addition, as shown in the descriptive statistics, the level of competition-related 10-K language gradually declined from 1996 to 2009, which may indicate that such language became more general and less informative after the Sarbanes-Oxley Act. In the pre-SOX period, competition-related 10-K language may therefore have reflected management's disclosure incentives more strongly than in the post-SOX period.

Interestingly, in the post-SOX period, the negative relation between past earnings and current returns is stronger for firms that use more competition-related 10-K language. Given the mean-reverting nature of earnings and the expected negative sign on *EAt-1* (cf. Lundholm and Myers, 2002, 815), this result suggests that mean reversion is stronger, on average, among firms that use more competition-related 10-K language in the post-SOX period. This finding is consistent with the view that competition-related 10-K language is associated with firms' competition-related risk, which may also help explain why earnings reverse more quickly among firms that use more such language.[6]

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[6] Furthermore, I examine whether the results become stronger when the global financial crisis years (fiscal years 2007–2009) are excluded from the sample. The untabulated results are weaker and less consistent. One interpretation is that this research design is not well suited to isolating a specific crisis episode, because the models simultaneously examine

Overall, the results do not support H5 in the sense that the positive association between competition-related 10-K language and current earnings response coefficients is present in both periods, and no clear difference emerges in that respect between the pre- and post-SOX settings. At the same time, the results do support H5 insofar as they reveal differences in the relation between competition-related 10-K language and past and future earnings across the two periods. The pre-SOX findings are also broadly consistent with Lundholm and Myers (2002), who show that corporate disclosure quality, measured from analysts' perspective, amplifies investors' reactions to contemporaneous earnings information in the pre-SOX period.

(Table 7A and 7B)

5.5. *Additional Analyses*

5.5.1 Excluding Observations with Negative Earnings

Negative earnings may be problematic in ERC research if investors' reactions are not symmetric with respect to the sign of earnings. Therefore, I conduct an additional robustness test in which earnings are restricted to non-negative values. In these regressions, all earnings observations that are negative or equal to zero are set to zero. Table 8A reports the results using aggregated future earnings and return measures, whereas Table 8B reports the results using disaggregated future earnings and return measures.

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past earnings, current earnings, and future earnings over the subsequent three years. This creates timing-related complications and makes the full-sample models, which include all available years, the most balanced specification. Excluding the crisis years on the basis of COMPUSTAT fiscal years does not fully remove crisis-related effects from the analysis, because the future earnings and return variables still capture information from crisis periods. In addition, the stock return and earnings variables are expected to reflect prevailing macroeconomic conditions, since stock returns reacted quickly during the financial crisis and anticipated deteriorating future earnings. Removing crisis years would therefore reduce the power of the tests, weaken the results, and increase the risk of Type II error. For the same reason, I do not separately exclude the IT bubble years.

Interestingly, the results show that current earnings response coefficients are substantially higher when negative earnings values are recoded as zero. For example, in Table 5A the current earnings response coefficient in the full model is -0.102, whereas in Table 8A it is 1.656. In both models, the coefficient on the interaction term $DISC_{t-1} * EA_t$ is positive and statistically significant, but the coefficient on $DISC_{t-1} * EA_{t3}$ is significant only when negative earnings values are included in the model.

A comparison of the disaggregated models provides additional insight into this issue. The current and future earnings response coefficients in the full models (Table 5B versus Table 8B) are as follows: EA_t (-0.226/0.694), EA_{t+1} (0.846/2.146), EA_{t+2} (0.533/0.938), EA_{t+3} (0.364/0.915). Interestingly, in Table 8B, where the emphasis is on non-negative earnings, the strongest interaction effect is observed for $DISC_{t-1} * EA_{t+1,}$ which is positive and statistically significant. By contrast, $DISC_{t-1} * EA_{t+2}$ and $DISC_{t-1} * EA_{t+3}$ are negative but not statistically significant. This differs clearly from Table 5B, where the coefficient on $DISC_{t-1} * EA_t$ is positive and significant, and the coefficients on $DISC_{t-1} * EA_{t+2}$ and $DISC_{t-1} * EA_{t+3}$ are negative and significant.

Taken together, these results suggest two things. First, negative earnings materially reduce earnings response coefficients. Second, investors' interpretations of competition-related 10-K language appear to depend on the firm's earnings-generating ability. On average, competition-related 10-K language appears to be interpreted as risk-reducing when it is provided by firms that generate positive earnings. By contrast, when firms report losses, competition-related 10-K language appears to be interpreted as risk-increasing and therefore moderates investors' reactions to future earnings signals. This pattern is also consistent with the loss-firm results reported in Table 6B.

(Table 8A and 8B)

5.5.2 The Effect of Industry Competition Measured by the Herfindahl Index

Next, I control more directly for industry structure by computing a Herfindahl index for each two-digit SIC industry. This index serves as a measure of industry concentration and provides an indirect proxy for the level of competition in the industry.[7] A higher Herfindahl index value

[7] The Herfindahl index is computed for each two-digit SIC industry based on the market shares of the four largest firms, where market share is measured using each firm's proportion of total annual industry sales. Only two-digit SIC

indicates a more concentrated industry and, correspondingly, a lower level of competition. I divide the firms into two subgroups based on the 25th and 75th percentiles of this variable. Firms with values above the 75th percentile are classified as operating in concentrated industries, whereas firms with values below the 25th percentile are classified as operating in more competitive industries.

The untabulated results suggest that there is no substantial difference between these two subsamples. In the concentrated-industry subgroup, the effect of competition-related 10-K language on investors' reactions to current earnings information is statistically somewhat more significant, although the regression coefficient is larger in the competitive-industry subgroup. A similar conclusion emerges when negative earnings are recoded as zero. Interestingly, when the analysis is restricted to loss firms, the results show that investors' reactions to future earnings signals ($t + 1$) are moderated by competition-related 10-K language in the concentrated-industry subgroup, whereas no equally strong or statistically significant association is observed in the competitive-industry subgroup. This pattern may indicate that investors interpret competition-related 10-K language differently across industry structures and may attach greater weight to such language among loss firms operating in concentrated industries.

5.5.3 Additional Control Variables

Lastly, I assess the robustness of the results by augmenting the model with additional control variables. Specifically, I include controls for financial leverage, three-year growth, market beta, and the Herfindahl index.[8] The untabulated results indicate that the inclusion of these additional control variables does not materially alter the main findings. In the model corresponding to the last column of Table 5B and augmented with the additional controls, the coefficient on $DISC_{t-1} * EA_t$ remains positive and statistically significant (coef. 0.265; t-value 2.85), the coefficient on $DISC_{t-1} * EA_{t+2}$ remains negative and statistically significant (coef. -0.454; t-value -4.07), and the

industries with at least four operating firms in the COMPUSTAT sample are included. Further details on the construction of the measure and the related results are available from the authors upon request.

[8] Financial leverage is measured as total liabilities (LT) scaled by total assets (AT) at the end of the fiscal year (t-1). Three-year growth is measured as sales growth from year (t-3) to (t-1). Market beta is estimated from monthly returns over the preceding 12 months. The Herfindahl index is constructed as described in Section 5.5.2.

coefficient on $DISC_{t-1} * EA_{t+3}$ remains negative (coef. -0.201; t-value -1.66). The number of observations decreases from 25,039 to 21,085, and the adjusted R-square is 23.50%.

The results for the loss-firm model reported in Table 6B and augmented with the additional control variables show that the sample size decreases from 6,246 to 5,120, and that the adjusted R-square is 27.70%. The coefficient on $DISC_{t-1} * EA_t$ is positive and statistically significant (coef. 0.221; t-value 2.14), whereas the coefficients on $DISC_{t-1} * EA_{t+1}$ and $DISC_{t-1} * EA_{t+2}$ are negative and statistically significant (coefficients -0.362 and -0.469; t-values -2.14 and -2.47, respectively). The coefficient on $DISC_{t-1} * EA_{t+3}$ is also negative (coef. -0.312; t-value -1.86).

The results for the model reported in Table 8B and augmented with the additional control variables show that the sample size decreases from 25,039 to 21,085 and that the adjusted R-square is 38.60%. The coefficient on $DISC_{t-1} * EA_t$ remains positive but is not statistically significant (coef. 0.372; t-value 1.38).

6. Conclusions and Discussion

This paper examines whether competition-related 10-K language, which has a direct link to firm risk, affects investors' responses to earnings signals. Competition-related 10-K language is an important information item because it may contain information that is proprietary in nature. Understanding the significance of disclosures related to firm risk is important because prior literature has documented relatively low earnings response coefficients. This highlights the need to better understand the interplay between quantitative earnings information and qualitative risk-related information.

The research question is examined by analyzing the competition-related 10-K language of U.S. listed firms over a fourteen-year period spanning the years before and after the Sarbanes-Oxley Act (SOX). The empirical design follows prior literature on current and future earnings response coefficients, beginning with Collins et al. (1994). The measure of competition-related 10-K language is based on Li et al. (2013). The main sample includes 25,039 firm-year observations. The results show that competition-related 10-K language is associated with investors' responses to both current and future earnings signals. More specifically, the findings suggest that competition-related 10-K language is related to both the firm's information environment and its competition-related risk. Investors' use of this type of information together with earnings information depends

on the time horizon considered. Competition-related 10-K language strengthens investors' reactions to current earnings information but weakens their reactions to future earnings information. The results also indicate that the effect of competition-related 10-K language on earnings responses depends on firm characteristics associated with firm risk. Additional analyses show that competition-related 10-K language became more harmonized over the sample period, and that during this process its negative association with future earnings response coefficients disappeared. However, its positive association with current earnings response coefficients is present in both the pre- and post-SOX periods.

These findings are broadly consistent with the predictions of the earnings response coefficient framework (Kormendi and Lipe 1987) and suggest that competition-related 10-K language can provide investors with value-relevant information about firm risk. In the shorter term, the reduction in information risk appears to be the dominant effect, which is reflected in the positive association between competition-related 10-K language and current earnings response coefficients. Over a longer horizon, the increase in perceived competition-related risk appears to be the dominant effect, which is reflected in the negative association between competition-related 10-K language and future earnings response coefficients.

In this respect, the findings differ from Lundholm and Myers (2002). Whereas their study suggests that disclosures can "bring the future forward" by increasing the extent to which current returns reflect future earnings news, the evidence in this paper suggests that specific risk-related narrative may also attenuate the pricing of future earnings information. One possible interpretation is that higher levels of competition-related 10-K language make investors more uncertain about the persistence of earnings, thereby weakening future earnings response coefficients. At the same time, it is important to emphasize that this paper documents associations rather than causal effects, and the results should be interpreted accordingly.

This study contributes to the risk disclosure literature, which examines the economic consequences of corporate risk disclosures (e.g., Kravet and Muslu 2013; Campbell et al. 2014), by showing how investors evaluate earnings information together with non-financial disclosures that have a direct link to firm risk. Competition-related information links the paper to this literature because competition is one of the major risks faced by firms and is likely to influence disclosure behavior.

The paper also contributes to the literature on earnings response coefficients. Prior ERC research shows that disclosures can enhance the explanatory power of return–earnings models by increasing the extent to which current returns reflect future earnings news (Lundholm and Myers 2002). This study adds to that literature by focusing on a specific type of narrative disclosure that has a clear link to firms' competitive environment and may therefore act as a catalyst in investors' interpretation of earnings information. In addition, because competition-related 10-K language changed over time, the paper is able to shed light on how the harmonization of this type of information affects the returns–earnings relation.

The findings also have practical implications for managers and boards of directors when considering firms' disclosure strategies. Competition-related 10-K language may increase transparency and reduce information asymmetry. At the same time, investors may interpret long-term earnings signals more cautiously when they are evaluated together with competition-related information. Thus, managers and boards must weigh the potential benefits of reduced information risk against the possible costs associated with revealing information that may be proprietary in nature. The findings may also be relevant to regulators, including the SEC, as they continue to develop narrative risk disclosure requirements with the aim of improving the usefulness of firms' risk reporting.

This study is subject to limitations. First, a substantial number of observations are lost when the accounting and return data are merged with the competition-related 10-K language data. As a result, sample selection may affect the findings. However, such selection would likely reduce variation in the competition-related 10-K language measure and thereby work against finding significant results. If anything, this suggests that sample selection is unlikely to explain the main findings. Second, as is typical in social science research, the study does not establish causality but instead focuses on documented associations. Although endogeneity concerns cannot be fully ruled out, they do not appear to overturn the main patterns observed in the data. Overall, despite these limitations, the study provides new evidence on the interplay between earnings information and a specific risk-related narrative topic and thereby contributes to our understanding of how qualitative disclosures shape capital market responses.

Future research could extend this analysis by focusing on industries characterized by particularly intense competition. It would also be useful to examine whether similar patterns arise

in non-U.S. settings, where institutional features, disclosure environments, and corporate governance systems may differ from those in the United States.

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AI use statement: Artificial intelligence tools were used for language editing and improving readability. The analyses, interpretations, and conclusions presented in the paper reflect the author's own scholarly judgment.

Table 1. Variable definitions

RET_t	A cumulative 12-month buy and hold return for the firm in year (t), measured over the 12-month period ending three months after the firm's fiscal year (t) end.
EA_{t-1}	Earnings (t-1) before extraordinary items (IBCOM) deflated by market value of equity three months after the year (t-1) fiscal year end.
EA_t	Earnings (t) before extraordinary items (IBCOM) deflated by market value of equity three months after the year (t-1) fiscal year end.
EA_{t+1}	Earnings (t+1) before extraordinary items (IBCOM) deflated by market value of equity three months after the year (t-1) fiscal year end.
EA_{t+2}	Earnings (t+2) before extraordinary items (IBCOM) deflated by market value of equity three months after the year (t-1) fiscal year end.
EA_{t+3}	Earnings (t+3) before extraordinary items (IBCOM) deflated by market value of equity three months after the year (t-1) fiscal year end.
EA_{t3}	Aggregate earnings (t+1), (t+2), (t+3) before extraordinary items (IBCOM) deflated by market value of equity three months after the year (t-1) fiscal year end.
RET_{t+1}	A cumulative 12-month buy and hold return for the firm in year (t+1), measured over the 12-month period ending three months after the firm's fiscal year (t+1) end.
RET_{t+2}	A cumulative 12-month buy and hold return for the firm in year (t+2), measured over the 12-month period ending three months after the firm's fiscal year (t+2) end.
RET_{t+3}	A cumulative 12-month buy and hold return for the firm in year (t+3), measured over the 12-month period ending three months after the firm's fiscal year (t+3) end.
RET_{t3}	A cumulative compounded 36-month buy and hold return for years (t+1), (t+2), and (t+3). Yearly return period ends three months after the firm's fiscal year end.

$DISC_{t-1}$	Competition-related 10-K language in the annual filing for year $t-1$, measured as the number of competition-related words per 1,000 total words in the 10-K, following Li et al. (2013). The measure includes the words *competition*, *competitor*, *competitive*, *compete*, and *competing*, including plural forms where applicable, excluding cases where the word is preceded within three words by *not, less, few*, or *limited*.
SIZE	It is the natural logarithm of the total assets of the firm in the end of fiscal year (t-1).
BM	It is the book to market ratio of the firm in the end of fiscal year (t-1).
ROA	It is the return on assets ratio of the firm in the end of fiscal year (t-1). It is computed by dividing earnings before interest and taxes by total assets.

Table 2. Sample selection criteria (Nobs=25,039)

Selection criteria	Firm-years
1. Listed firms available from COMPUSTAT in 1994 - 2014	243,232
	(23,071)
2. Observations after merging the COMPUSTAT data with CRSP permno (link table)	220 161
	(5,116)
3. Observations after omitting the missing earnings data	215,045
	(97,763)
4. Observations after merging with CRSP return data	117,282
	(50,113)
5. Observations after computing earnings and returns for time periods (t-1), (t), (t+1), (t+2), and (t+3)	67,169
	(33,690)
6. Observations after merging the data with competition related 10-K language data	33,479
	(8,651)
7. Observations after omitting missing control variables	25,039

Table 3. Descriptive statistics of the variables (Nobs=25,039)

Panel A: Target sample

	Mean	*Median*	*Min*	*Max*	*Std.Dev*
RET_t	0.193	0.069	-0.869	3.474	0.700
EA_{t-1}	-0.017	0.041	-2.474	0.262	0.281
EA_t	0.001	0.045	-1.946	0.317	0.211
EA_{t+1}	0.024	0.048	-1.360	0.538	0.180
EA_{t+2}	0.034	0.050	-1.175	0.780	0.199
EA_{t+3}	0.038	0.051	-1.199	0.904	0.224
EA_{t3}	0.097	0.140	-2.685	1.865	0.492
RET_{t+1}	0.190	0.060	-0.874	3.628	0.714
RET_{t+2}	0.180	0.054	-0.868	3.563	0.702
RET_{t+3}	0.179	0.078	-0.856	3.278	0.657
RET_{t3}	0.061	0.053	-0.613	0.975	0.287
$DISC_{t-1}$	0.569	0.423	0.000	4.887	0.487
SIZE	6.034	5.910	2.142	10.594	1.927
BM	0.613	0.417	0.000	6.103	0.775
ROA	0.088	0.089	-0.352	0.421	0.121

This panel provides the mean, median, minimum, maximum, and standard deviation values of the variables in the pooled sample. Number of observations is 25,039 for each variable. For variable definitions, see table 1.

Table 3. Descriptive statistics of the variables (Nobs=25,039)

Panel B: Yearly values for the competition related 10-K language ($DISC_{t-1}$)

	Nobs	*Mean*	*Median*	*Min*	*Max*	*Std.Dev*
1996	2,608	0.784	0.659	0.007	4.096	0.545
1997	2,870	0.817	0.683	0.013	4.203	0.554
1998	2,709	0.815	0.703	0.029	4.988	0.540
1999	2,555	0.827	0.699	0.029	4.414	0.557
2000	2,554	0.797	0.675	0.000	3.981	0.537
2001	2,450	0.666	0.531	0.006	3.320	0.500
2002	2,299	0.483	0.362	0.005	2.931	0.403
2003	2,283	0.425	0.328	0.000	2.979	0.353
2004	2,156	0.388	0.297	0.005	2.563	0.319
2005	2,131	0.366	0.287	0.000	2.463	0.296
2006	1,957	0.315	0.255	0.005	2.238	0.244
2007	1,752	0.307	0.258	0.000	2.570	0.224
2008	1,736	0.287	0.239	0.000	2.350	0.213
2009	1,371	0.246	0.197	0.004	2.037	0.193

This panel provides the mean, median, minimum, maximum, and standard deviation values for the yearly values of the measure of competition related 10-K language ($DISC_{t-1}$).

Table 4. Correlation matrix

	RET_t	EA_{t-1}	EA_t	EA_{t+1}	EA_{t+2}	EA_{t+3}	EA_{t3}	RET_{t+1}	RET_{t+2}	RET_{t+3}	RET_{t3}	$DISC_{t-1}$	*SIZE*	*BM*	*ROA*
RET_t															
EA_{t-1}	**-0.21**														
EA_t	**0.04**	**0.49**													
EA_{t+1}	**0.21**	**0.24**	**0.41**												
EA_{t+2}	**0.12**	**0.14**	**0.26**	**0.51**											
EA_{t+3}	**0.09**	**0.10**	**0.20**	**0.34**	**0.53**										
EA_{t3}	**0.17**	**0.18**	**0.34**	**0.71**	**0.83**	**0.80**									
RET_{t+1}	**-0.15**	**-0.08**	**-0.12**	**0.12**	**0.21**	**0.11**	**0.18**								
RET_{t+2}	**-0.05**	**-0.02**	**-0.06**	**-0.10**	**0.13**	**0.21**	**0.11**	**-0.15**							
RET_{t+3}	**-0.07**	0.00	0.01	**-0.03**	**-0.05**	**0.18**	**0.05**	**-0.05**	**-0.13**						
RET_{t3}	**-0.15**	-0.01	**-0.03**	**0.13**	**0.34**	**0.45**	**0.40**	**0.52**	**0.37**	**0.41**					
$DISC_{t-1}$	0.00	-0.01	**-0.03**	**-0.06**	**-0.06**	**-0.06**	**-0.08**	**0.02**	**0.04**	0.00	**-0.03**				
SIZE	**-0.05**	**0.08**	**0.06**	**0.07**	**0.08**	**0.09**	**0.10**	**-0.05**	**-0.03**	**-0.02**	**0.04**	**-0.26**			
BM	**-0.22**	**-0.16**	**-0.40**	**-0.23**	**-0.10**	**-0.07**	**-0.16**	**0.25**	**0.08**	**0.06**	**0.23**	0.00	**-0.07**		
ROA	**-0.09**	**0.40**	**0.33**	**0.22**	**0.17**	**0.14**	**0.21**	**-0.08**	**-0.03**	-0.01	0.00	-0.01	**0.17**	**-0.23**	

This table provides the Pearson correlation coefficients between the variables. For variable definitions, see table 1. The number of observations is 25,039 for each variable. Correlation coefficients significant at one percent level or lower are **bolded** and coefficients significant at five percent level or lower are presented in *italics.*

Table 5A. Regressions results for the competition related 10-K language and future earnings response coefficients – future earnings and returns aggregated

Ind. variables	**Dependent variable:** RET_t		
EA_{t-1}	-0.757***	-0.747***	-0.663***
	(-8.05)	(-10.37)	(-8.04)
EA_t	0.249*	0.0608	-0.102
	(1.85)	(0.31)	(-0.61)
EA_{t3}	0.433***	0.547***	0.524***
	(7.58)	(10.67)	(10.70)
RET_{t3}	-0.652***	-0.540***	-0.423***
	(-4.93)	(-3.64)	(-3.41)
$DISC_{t-1}$		0.0369	0.0161
		(0.50)	(0.24)
$DISC_{t-1} * EA_{t-1}$		-0.0142	0.00719
		(-0.12)	(0.07)
$DISC_{t-1} * EA_t$		0.336**	0.318**
		(2.27)	(2.40)
$DISC_{t-1} * EA_{t3}$		-0.193***	-0.188***
		(-2.93)	(-3.00)
$DISC_{t-1} * RET_{t3}$		-0.175	-0.183
		(-0.86)	(-0.93)
SIZE			-0.0173
			(-1.47)
BM			-0.157***
			(-4.80)
ROA			-0.475**
			(-2.24)
Intercept	0.177***	0.152*	0.403***
	(2.66)	(1.88)	(3.05)
Observations	25,039	25,039	25,039
Adjusted R^2	0.157	0.165	0.194
F-value	425.7	200.0	229.4

This table provides regression results for the determinants of cumulative 12-month buy and hold returns between the fiscal years 1996-2009. Variable definitions can be found in table 1. Non-winsorized values of $DISC_{t-1}$ are used. All other variables are winsorized at the 1 percent and 99 percent level. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively. T-values of parameter estimates are computed from the heteroscedasticity robust standard errors clustered by firm and year. Earnings and returns for the time periods (t+1), (t+2), and (t+3) are aggregated.

Table 5B. Regressions results for the competition related 10-K language and future earnings response coefficients – future earnings and returns disaggregated

Ind. variables	**Dependent variable:** RET_t		
EAt-1	-0.788***	-0.771***	-0.682***
	(-9.66)	(-11.33)	(-8.71)
EAt	0.106	-0.0991	-0.226
	(0.81)	(-0.58)	(-1.46)
EAt+1	0.887***	0.880***	0.846***
	(16.68)	(7.76)	(7.44)
EAt+2	0.234*	0.532***	0.533***
	(1.80)	(4.38)	(4.28)
EAt+3	0.216**	0.364***	0.364***
	(2.41)	(3.61)	(3.46)
RETt+1	-0.236***	-0.254***	-0.213***
	(-5.23)	(-4.69)	(-4.55)
RETt+2	-0.100***	-0.126***	-0.108***
	(-3.24)	(-3.11)	(-2.72)
RETt+3	-0.102***	-0.0436	-0.0331
	(-3.50)	(-1.55)	(-1.21)
$DISC_{t-1}$		0.0546	0.0313
		(0.67)	(0.41)
$DISC_{t-1} * EA_{t-1}$		-0.0182	0.00784
		(-0.15)	(0.08)
$DISC_{t-1} * EA_t$		0.364***	0.334***
		(2.91)	(2.95)
$DISC_{t-1} * EA_{t+1}$		-0.0141	-0.0218
		(-0.10)	(-0.16)
$DISC_{t-1} * EA_{t+2}$		-0.473***	-0.455***
		(-3.69)	(-3.26)
$DISC_{t-1} * EA_{t+3}$		-0.234**	-0.216**
		(-2.24)	(-2.09)
$DISC_{t-1} * RET_{t+1}$		0.0217	0.00660
		(0.45)	(0.15)
$DISC_{t-1} * RET_{t+2}$		0.0358	0.0260
		(0.88)	(0.65)
$DISC_{t-1} * RET_{t+3}$		-0.0867*	-0.0850*
		(-1.89)	(-1.81)
SIZE			-0.0224*

			(-1.88)
BM			-0.142***
			(-4.40)
ROA			-0.523***
			(-2.69)
Intercept	0.222***	0.187**	0.460***
	(3.30)	(2.36)	(3.47)
Observations	25,039	25,039	25,039
Adjusted R^2	0.177	0.188	0.215
F-value	247.8	132.7	164.6

This table provides regression results for the determinants of cumulative 12-month buy and hold returns between the fiscal years 1996-2009. Variable definitions can be found in table 1. Non-winsorized values of $DISC_{t-1}$ are used. All other variables are winsorized at the 1 percent and 99 percent level. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively. T-values of parameter estimates are computed from the heteroscedasticity robust standard errors clustered by firm and year. Earnings and returns for the time periods (t+1), (t+2), and (t+3) are disaggregated.

Table 6A. Regressions results for the subsamples

	Dependent variable: RET_t					
Ind. variables	*Small Firms*	*Large Firms*	*Low_BM*	*High_BM*	*Low_ROA*	*High_ROA*
EAt-1	-0.996***	-0.704***	-0.418***	-0.748***	-0.562***	0.0208
	(-6.42)	(-14.18)	(-3.35)	(-7.73)	(-5.35)	(0.09)
EAt	0.395**	-0.486***	-0.113	-0.188	-0.579***	1.497**
	(2.28)	(-2.69)	(-0.61)	(-1.23)	(-3.34)	(2.41)
EAt+1	0.870***	0.885***	0.535**	0.687***	0.336***	1.876***
	(3.61)	(4.73)	(1.97)	(7.41)	(2.70)	(4.68)
EAt+2	0.217	0.912***	0.235	0.444***	0.179	0.573***
	(1.30)	(3.00)	(1.39)	(2.96)	(0.63)	(3.36)
EAt+3	0.243**	0.197	0.245*	0.310***	0.0830	0.284**
	(2.22)	(1.21)	(1.88)	(3.31)	(0.58)	(2.09)
RETt+1	-0.197***	-0.272***	-0.223***	-0.227***	-0.153***	-0.239***
	(-6.11)	(-5.16)	(-4.34)	(-6.29)	(-3.71)	(-5.40)
RETt+2	-0.0708*	-0.134***	-0.0677**	-0.144***	-0.0423	-0.0836***
	(-1.78)	(-2.73)	(-2.27)	(-2.75)	(-0.84)	(-2.75)
RETt+3	-0.0927**	0.0469	-0.0607**	-0.0163	-0.0598	-0.0276
	(-2.54)	(1.45)	(-2.49)	(-0.55)	(-1.21)	(-1.01)
$DISC_{t-1}$	0.0428	-0.0121	0.00661	-0.0913	0.0674	0.0588
	(0.52)	(-0.20)	(0.36)	(-1.41)	(0.55)	(0.67)
$DISC_{t-1} * EA_{t-1}$	0.278**	0.363**	-0.217*	0.176***	0.0174	-0.281
	(2.09)	(2.07)	(-1.65)	(2.87)	(0.12)	(-0.87)
$DISC_{t-1} * EA_t$	0.0999	0.390**	0.401**	0.158	0.383***	0.874
	(0.53)	(2.17)	(2.45)	(1.39)	(2.62)	(1.16)
$DISC_{t-1} * EA_{t+1}$	0.0172	-0.520	0.246	-0.106	-0.163	-0.0987
	(0.06)	(-1.28)	(0.69)	(-0.78)	(-1.00)	(-0.21)
$DISC_{t-1} * EA_{t+2}$	-0.437***	-0.714**	0.0565	-0.313**	-0.476**	-0.415
	(-2.58)	(-2.04)	(0.21)	(-2.24)	(-2.31)	(-1.16)
$DISC_{t-1} * EA_{t+3}$	-0.0182	0.139	-0.247*	-0.110	-0.139	-0.113
	(-0.17)	(0.67)	(-1.89)	(-0.91)	(-0.93)	(-0.55)
$DISC_{t-1} * RET_{t+1}$	-0.00441	0.109*	0.0714**	0.0585**	-0.0158	0.0307
	(-0.12)	(1.94)	(2.10)	(2.26)	(-0.29)	(0.82)
$DISC_{t-1} * RET_{t+2}$	-0.000197	-0.0361	0.0337**	0.0869**	-0.0335	0.0154
	(-0.00)	(-0.50)	(2.03)	(2.11)	(-0.66)	(0.26)
$DISC_{t-1} * RET_{t+3}$	-0.0519	-0.143**	0.00505	-0.0432	-0.0350	-0.122*
	(-0.98)	(-2.11)	(0.29)	(-1.25)	(-0.56)	(-1.66)
SIZE	-0.0162	-0.0317***	0.00770	-0.0144	-0.0204	-0.0411***

	(-0.80)	(-3.72)	(1.03)	(-1.18)	(-1.06)	(-3.07)
BM	-0.114***	-0.154***	----	-0.0976***	-0.178***	-0.593***
	(-3.01)	(-5.22)	----	(-3.56)	(-4.64)	(-6.16)
ROA	-0.623***	-0.440**	-0.0551	-0.332	0.0476	-1.174***
	(-3.04)	(-2.17)	(-0.92)	(-1.27)	(0.27)	(-6.14)
Intercept	0.424***	0.560***	0.203***	0.350***	0.240	0.585***
	(4.03)	(4.70)	(7.62)	(2.65)	(1.43)	(4.10)
Observations	4,891	6,122	3,633	9,050	3,935	8,454
Adjusted R^2	0.175	0.290	0.142	0.251	0.229	0.370
F-value	31.80	65.68	10.80	85.71	42.33	69.84

This table provides regression results for the determinants of cumulative 12-month buy and hold returns between the fiscal years 1996-2009. Variable definitions can be found in table 1. Non-winsorized values of $DISC_{t-1}$ are used. All other variables are winsorized at the 1 percent and 99 percent level. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively. T-values of parameter estimates are computed from the heteroscedasticity robust standard errors clustered by firm and year. Earnings and returns for the time periods (t+1), (t+2), and (t+3) are disaggregated.

Table 6B. Additional analysis across different earnings levels

Ind. variables	**Dependent variable:** RET_t					
	Profit	***Hi_profit***	***Lo_profit***	***Loss***	***Lo_loss***	***Hi_loss***
EAt-1	-0.443***	-0.307	-0.459***	-0.596***	-0.556***	-0.443***
	(-5.60)	(-1.29)	(-3.97)	(-6.70)	(-5.92)	(-4.27)
EAt	3.178***	3.317***	3.700***	-0.554***	-1.128***	-0.735***
	(6.88)	(6.04)	(5.21)	(-3.54)	(-3.64)	(-4.23)
EAt+1	0.759***	1.216***	0.598***	0.512***	0.820***	0.225***
	(5.34)	(4.54)	(4.49)	(5.97)	(5.84)	(3.58)
EAt+2	0.575***	0.709***	0.436***	0.324	0.509***	0.158
	(6.78)	(6.24)	(4.33)	(1.50)	(3.29)	(0.61)
EAt+3	0.363***	0.236	0.399***	0.174*	0.351**	0.0750
	(3.64)	(1.57)	(3.46)	(1.78)	(2.21)	(0.87)
RETt+1	-0.213***	-0.226***	-0.207***	-0.184***	-0.222***	-0.160***
	(-4.04)	(-4.90)	(-3.69)	(-4.36)	(-4.65)	(-4.29)
RETt+2	-0.120***	-0.118***	-0.116***	-0.0774	-0.102**	-0.0755
	(-4.15)	(-3.95)	(-3.31)	(-1.59)	(-2.17)	(-1.59)
RETt+3	-0.0255	-0.0330	-0.0304	-0.0459	-0.0422	-0.0474
	(-1.10)	(-1.11)	(-1.37)	(-1.21)	(-1.15)	(-1.13)
$DISC_{t-1}$	0.0611	0.121	0.0246	-0.00110	-0.0225	0.0541
	(0.97)	(1.57)	(0.44)	(-0.01)	(-0.20)	(0.52)
$DISC_{t-1} * EA_{t-1}$	-0.0232	-0.193	0.0497	-0.00621	-0.0753	0.0310
	(-0.18)	(-0.55)	(0.37)	(-0.05)	(-0.31)	(0.29)
$DISC_{t-1} * EA_t$	-0.0199	-0.143	-0.466	0.336***	0.0861	0.345***
	(-0.06)	(-0.30)	(-0.76)	(2.64)	(0.19)	(3.21)
$DISC_{t-1} * EA_{t+1}$	0.381**	0.218	0.348*	-0.290**	-0.422***	-0.179
	(2.13)	(0.75)	(1.81)	(-2.12)	(-2.79)	(-1.42)
$DISC_{t-1} * EA_{t+2}$	-0.431	-0.524	-0.320	-0.430**	-0.506***	-0.389
	(-1.58)	(-1.28)	(-1.32)	(-2.36)	(-2.73)	(-1.57)
$DISC_{t-1} * EA_{t+3}$	-0.154*	-0.0285	-0.252**	-0.248*	-0.423	-0.138**
	(-1.72)	(-0.14)	(-2.21)	(-1.93)	(-1.40)	(-2.07)
$DISC_{t-1} * RET_{t+1}$	0.00456	0.00230	0.0233	0.00327	0.0331	-0.00390
	(0.09)	(0.04)	(0.59)	(0.07)	(0.72)	(-0.08)
$DISC_{t-1} * RET_{t+2}$	0.0456	0.0341	0.0609**	-0.00532	0.0392	-0.0179
	(1.34)	(0.62)	(2.14)	(-0.12)	(1.05)	(-0.36)
$DISC_{t-1} * RET_{t+3}$	-0.112**	-0.120	-0.0805**	-0.0289	-0.0784*	-0.0113
	(-1.97)	(-1.60)	(-2.37)	(-0.62)	(-1.80)	(-0.18)
SIZE	-0.0270***	-0.0375***	-0.0166*	-0.00248	-0.00157	-0.0280*

	(-2.63)	(-3.02)	(-1.76)	(-0.14)	(-0.09)	(-1.71)
BM	-0.221***	-0.520***	-0.155***	-0.163***	-0.130***	-0.210***
	(-4.43)	(-5.44)	(-3.99)	(-5.55)	(-5.79)	(-4.89)
ROA	-1.047***	-0.935***	-1.348***	-0.0118	-0.570**	-0.0689
	(-4.80)	(-4.62)	(-4.52)	(-0.06)	(-2.40)	(-0.38)
Intercept	0.343***	0.404***	0.277***	0.223	0.270*	0.184
	(3.25)	(3.38)	(2.76)	(1.40)	(1.74)	(1.17)
Observations	18,793	9,644	9,149	6,246	3,391	2,855
Adjusted R^2	0.330	0.373	0.311	0.244	0.300	0.269
F-value	168.9	92.01	90.47	72.08	48.27	39.02

This table provides regression results for more detailed analysis after conditioning the results for different levels of profitability. Loss and profit firm are first divided to main groups (*Profit* vs. *Loss*) by using income before extraordinary items (IB) for the fiscal year (t) as the criteria. *Profit* represents firms, which have non-negative income. *Loss* represents firms, which have negative income. Then the profit and loss firms are divided into subgroups (*Hi_profit*, *Lo_profit*, *Lo_loss*, *Hi_loss*) by using the main variable for earnings before extraordinary items (IBCOM) for the fiscal year (t) as the criteria. *Profit (high)* represents firms, whose earnings number is higher than the mean value, *Profit (low)* represents firms, whose earnings number is lower than the mean value, *Loss (low)* represents firms, whose loss is lower than the mean value, and *Loss (high)* represents firms, whose loss is higher than the mean value. Variable definitions can be found in Table 1. Non-winsorized values of $DISC_{t-1}$ are used. All other variables are winsorized at the 1 percent and 99 percent level. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively. T-values of parameter estimates are computed from the heteroscedasticity robust standard errors clustered by firm and year. Earnings and returns for the time periods (t+1), (t+2), and (t+3) are disaggregated.

Table 7A. Regressions results before the SOXLEY era – future earnings and returns disaggregated

Ind. variables	**Dependent variable:** RET_t		
EAt-1	-0.732***	-0.706***	-0.599***
	(-5.29)	(-4.49)	(-3.93)
EAt	0.197	-0.0419	-0.142
	(1.61)	(-0.22)	(-0.75)
EAt+1	0.812***	0.712***	0.671***
	(27.04)	(5.87)	(6.18)
EAt+2	0.0659	0.352***	0.362***
	(0.56)	(4.67)	(4.34)
EAt+3	0.229*	0.462***	0.468***
	(1.65)	(3.20)	(3.25)
RETt+1	-0.234***	-0.254***	-0.230***
	(-4.46)	(-4.96)	(-4.05)
RETt+2	-0.0671**	-0.0607***	-0.0492**
	(-2.52)	(-3.60)	(-2.21)
RETt+3	-0.140***	-0.0899**	-0.0723*
	(-3.86)	(-2.09)	(-1.82)
$DISC_{t-1}$		0.0379	0.0172
		(0.38)	(0.18)
$DISC_{t-1} * EA_{t-1}$		-0.0436	-0.00336
		(-0.32)	(-0.03)
$DISC_{t-1} * EA_t$		0.329**	0.281**
		(2.43)	(2.12)
$DISC_{t-1} * EA_{t+1}$		0.123	0.119
		(0.74)	(0.79)
$DISC_{t-1} * EA_{t+2}$		-0.369***	-0.351***
		(-3.51)	(-3.06)
$DISC_{t-1} * EA_{t+3}$		-0.313***	-0.285***
		(-3.06)	(-2.77)
$DISC_{t-1} * RET_{t+1}$		0.0173	0.0110
		(0.41)	(0.26)
$DISC_{t-1} * RET_{t+2}$		-0.00802	-0.0169
		(-0.21)	(-0.45)
$DISC_{t-1} * RET_{t+3}$		-0.0596	-0.0658
		(-1.08)	(-1.20)

SIZE			-0.0329*
			(-1.78)
BM			-0.144***
			(-3.13)
ROA			-0.681**
			(-2.14)
Intercept	0.261***	0.228*	0.576**
	(2.61)	(1.70)	(2.50)
Observations	14515	14515	14515
Adjusted R^2	0.143	0.152	0.188
F-value	133.9	68.81	89.98

This table provides regression results for the determinants of cumulative 12-month buy and hold returns by using fiscal years from 1996 to 2002. Variable definitions can be found in table 1. Non-winsorized values of $DISC_{t-1}$ are used. All other variables are winsorized at the 1 percent and 99 percent level. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively. T-values of parameter estimates arecomputed from the heteroscedasticity robust standard errors clustered by firm and year.

Table 7B. Regressions results after the SOXLEY era – future earnings and returns disaggregated

Ind. variables	**Dependent variable:** RET_t		
EAt-1	-0.823***	-0.733***	-0.669***
	(-33.92)	(-30.33)	(-11.12)
EAt	-0.00943	-0.0822	-0.226
	(-0.04)	(-0.33)	(-1.13)
EAt+1	0.952***	1.063***	1.010***
	(6.58)	(5.41)	(4.75)
EAt+2	0.561***	0.602***	0.578***
	(3.81)	(3.21)	(3.16)
EAt+3	0.202**	0.254***	0.253***
	(2.37)	(2.90)	(2.83)
RETt+1	-0.235***	-0.258***	-0.207***
	(-2.70)	(-2.91)	(-2.69)
RETt+2	-0.172***	-0.180***	-0.160**
	(-3.56)	(-2.86)	(-2.55)
RETt+3	-0.0375	-0.0133	-0.00859
	(-1.43)	(-0.47)	(-0.29)
$DISC_{t-1}$		-0.0462	-0.0710
		(-0.88)	(-1.52)
$DISC_{t-1} * EA_{t-1}$		-0.275***	-0.265***
		(-3.26)	(-3.41)
$DISC_{t-1} * EA_t$		0.226***	0.238***
		(3.10)	(3.10)
$DISC_{t-1} * EA_{t+1}$		-0.366*	-0.307
		(-1.94)	(-1.47)
$DISC_{t-1} * EA_{t+2}$		-0.0992	-0.0706
		(-0.41)	(-0.31)
$DISC_{t-1} * EA_{t+3}$		-0.141	-0.155
		(-0.85)	(-1.05)
$DISC_{t-1} * RET_{t+1}$		0.0654	0.0440
		(1.40)	(0.95)
$DISC_{t-1} * RET_{t+2}$		0.0195	0.0133
		(0.26)	(0.18)
$DISC_{t-1} * RET_{t+3}$		-0.0701*	-0.0662*
		(-1.88)	(-1.74)
SIZE			-0.00774

			(-1.50)
BM			-0.131***
			(-8.28)
ROA			-0.350***
			(-2.92)
Intercept	0.168**	0.181*	0.342***
	(2.09)	(1.91)	(3.80)
Observations	10524	10524	10524
Adjusted R^2	0.277	0.280	0.295
F-value	191.5	94.14	97.30

This table provides regression results for the determinants of cumulative 12-month buy and hold returns by using fiscal years from 2003 to 2009. Variable definitions can be found in table 1. Non-winsorized values of $DISC_{t-1}$ are used. All other variables are winsorized at the 1 percent and 99 percent level. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively. T-values of parameter estimates are computed from the heteroscedasticity robust standard errors clustered by firm and year.

Table 8A. Regressions results for the competition related 10-K language and future earnings response coefficients – future earnings and returns aggregated & earnings obtain only non-negative values

Ind. variables	**Dependent variable:** RET_t		
EA_{t-1}	-1.682***	-1.422**	-0.492
	(-3.20)	(-2.32)	(-0.92)
EA_t	2.087***	1.724***	1.656***
	(7.87)	(4.19)	(4.54)
EA_{t3}	1.106***	1.077***	1.013***
	(10.40)	(6.85)	(6.58)
RET_{t3}	-0.793***	-0.624***	-0.516***
	(-5.58)	(-4.51)	(-4.36)
$DISC_{t-1}$		0.0247	0.00860
		(0.32)	(0.12)
$DISC_{t-1} * EA_{t-1}$		-0.492	-0.198
		(-0.57)	(-0.26)
$DISC_{t-1} * EA_t$		0.713*	0.656*
		(1.88)	(1.70)
$DISC_{t-1} * EA_{t3}$		0.0467	0.0418
		(0.33)	(0.29)
$DISC_{t-1} * RET_{t3}$		-0.268	-0.280
		(-1.12)	(-1.20)
SIZE			-0.00943
			(-0.91)
BM			-0.135***
			(-5.58)
ROA			-0.872***
			(-3.23)
Intercept	-0.0215	-0.0374	0.149
	(-0.31)	(-0.47)	(1.21)
Observations	25,039	25,039	25,039
Adjusted R^2	0.272	0.276	0.305
F-value	1098.8	492.7	456.3

This table provides regression results for the determinants of cumulative 12-month buy and hold returns between the fiscal years 1996-2009. Earnings numbers which are negative or 0 obtain a value 0. Variable definitions can be found in table 1. Non-winsorized values of $DISC_{t-1}$ are used. All other variables are winsorized at the 1 percent and 99 percent level. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively. T-values of parameter estimates are computed from the heteroscedasticity robust standard errors clustered by firm and year. Earnings and returns for the time periods (t+1), (t+2), and (t+3) are aggregated.

Table 8B. Regressions results for the competition related 10-K language and future earnings response coefficients – future earnings and returns disaggregated & earnings obtain only non-negative values

Ind. variables	**Dependent variable:** RET_t		
EAt-1	-1.850***	-1.372**	-0.474
	(-3.69)	(-2.25)	(-0.86)
EAt	0.931***	0.679	0.694*
	(2.97)	(1.50)	(1.68)
EAt+1	2.608***	2.247***	2.146***
	(17.86)	(13.42)	(12.78)
EAt+2	0.835***	0.981***	0.938***
	(6.80)	(5.27)	(4.82)
EAt+3	0.857***	0.971***	0.915***
	(5.09)	(4.52)	(4.45)
RETt+1	-0.303***	-0.319***	-0.279***
	(-6.49)	(-9.65)	(-8.28)
RETt+2	-0.145***	-0.168***	-0.148***
	(-4.03)	(-4.19)	(-3.64)
RETt+3	-0.114***	-0.0569**	-0.0479*
	(-4.24)	(-2.22)	(-1.95)
$DISC_{t-1}$		0.0720	0.0528
		(0.71)	(0.55)
$DISC_{t-1} * EA_{t-1}$		-0.853	-0.560
		(-0.96)	(-0.69)
$DISC_{t-1} * EA_t$		0.485	0.412
		(0.95)	(0.81)
$DISC_{t-1} * EA_{t+1}$		0.620**	0.583**
		(2.18)	(2.04)
$DISC_{t-1} * EA_{t+2}$		-0.209	-0.186
		(-1.22)	(-1.06)
$DISC_{t-1} * EA_{t+3}$		-0.191	-0.189
		(-1.16)	(-1.08)
$DISC_{t-1} * RET_{t+1}$		0.0221	0.00730
		(0.41)	(0.14)
$DISC_{t-1} * RET_{t+2}$		0.0277	0.0193
		(0.58)	(0.41)
$DISC_{t-1} * RET_{t+3}$		-0.0885**	-0.0862*
		(-1.98)	(-1.88)

SIZE			-0.0143 (-1.41)
BM			-0.119*** (-4.43)
ROA			-0.828*** (-3.41)
Intercept	0.0210 (0.32)	-0.0226 (-0.31)	0.176 (1.49)
Observations	25,039	25,039	25,039
Adjusted R^2	0.326	0.331	0.357
F-value	681.4	337.1	342.6

This table provides regression results for the determinants of cumulative 12-month buy and hold returns between the fiscal years 1996-2009. Earnings numbers which are negative or 0 obtain a value 0. Variable definitions can be found in table 1. Non-winsorized values of $DISC_{t-1}$ are used. All other variables are winsorized at the 1 percent and 99 percent level. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent levels, respectively. T-values of parameter estimates are computed from the heteroscedasticity robust standard errors clustered by firm and year. Earnings and returns for the time periods (t+1), (t+2), and (t+3) are disaggregated.