How Does Readability Influence Investors' Judgments? Consistency of Benchmark Performance Matters

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ABSTRACT: We conduct two experiments to investigate how readability (high versus low) and benchmark performance consistency (consistent versus inconsistent) influence investors' judgments. Using prior management guidance and year-ago quarter performance as two benchmarks against which to assess actual earnings performance, we manipulate whether the valence of guidance performance (positive or negative) and the valence of trend performance (positive or negative) are consistent with each other. We also manipulate the readability of trend performance in our main experiment. Our results show that when benchmark performance is inconsistent, higher as opposed to lower readability of positive (negative) trend performance leads to more (less) favorable investors' performance judgments. This effect of readability is smaller when benchmark performance is consistent. We also show that higher readability in the inconsistent benchmark performance condition improves investors' understanding of the firm's current-quarter performance, which in turn influences their judgments on the firm's future performance. In a supplementary experiment, we manipulate the readability of guidance performance in an inconsistent benchmark performance setting, and replicate the key finding that higher readability of positive guidance performance leads to more positive judgment on the firm's future performance.

Keywords: readability; benchmark performance consistency; understanding; processing fluency; performance judgment.

I. INTRODUCTION

Managers often compare their firms' current-period performance against different benchmarks such as year-ago quarter earnings, analysts' consensus forecast, or prior guidance in their earnings press releases (Graham, Harvey, and Rajgopal 2005). While they prefer that such comparisons to lead to favorable evaluations of their firms (Schrand and Walther 2000; Krische 2005), a firm's current-period performance relative to different benchmarks can often conflict, depending on which benchmark is used (Rees 2005). As a result, a firm's benchmark performance can vary in terms of consistency. For instance, in a sample of 52,123 firm-year observations analyzed in Rees (2005), 19,222 observations (36.9 percent) either beat analysts' consensus forecast, but report negative earnings change, or miss analysts' consensus forecast, but report positive earnings change. In the presence of such inconsistencies, managers have incentives to strategically vary the readability—the ease with which a text can be read and understood (Dale and Chall 1949)—of selected information in order to portray the firm in the most favorable light (Courtis 1998; Li 2008). Managers can improve the readability of content related to the benchmark with positive implications, and/or obfuscate content of the benchmark with negative implications. In turn, such actions can affect how investors react to managers' disclosures.

Investigating this issue is important for several reasons. First, anecdotal evidence reveals that firms with inconsistent benchmark performance make the positive benchmark performance more readable than the negative benchmark performance. For example, United Airlines' 2012 fourth-quarter earnings release reports an overall operating loss, but highlights the good news in arguably easier-to-read bullet points. Similarly, Eli Lilly's 2013 third-quarter earnings release lists positive facts about the company in easier-to-read bullet points, but discusses the decrease in net income and earnings per share (EPS) using what appears to be more difficult-to-read language; see Appendix A. This evidence is consistent with regulators' concern with managers selectively emphasizing information in public disclosures as favorably as possible (Pozen 2008; Koonce, Seybert, and Smith 2013). Second, given this evidence, it is possible that investors' welfare may be adversely affected to the extent that their ability to fully understand the implications of the negative performance information is reduced. If managers make only certain measures that reflect negatively on the firm less readable, will investors ignore or make little use of that negative information? Alternatively, if managers make only favorable performance measures more readable, will the positive information have a greater impact on investors' judgments? Extant research investigates the effects of readability on investors' reactions in settings where readability varies for the entire disclosure (You and Zhang 2009; Miller 2010; Rennekamp 2012), but does not directly shed light on these further issues. In particular, existing literature does not examine settings where readability varies only for some aspects of the disclosure, such as selected benchmark performance, and how readability effects are moderated when benchmark performance varies in consistency.

Comprehension theory indicates that coherence or consistency is a key message attribute that people attend to, and influences how people process the message (Kintsch and Van Dijk 1978). In the absence of inconsistencies, messages are relatively easier to understand (Albrecht and O'Brien 1993), irrespective of variations in the readability of some selected content. On the other hand, in the presence of inconsistencies, messages become complicated and difficult to understand. In such cases, high (low) readability of some selected content is more likely to improve (impair) individuals' understanding, which in turn influences their judgments (Burgoon 1975; Masson and Waldron 1994). In our setting with inconsistent benchmark performance, if the selected benchmark performance that has positive implications is made more (less) readable, then investors' judgments are correspondingly more (less) positive, and *vice versa* if the benchmark performance has negative implications.

We conduct experiments using M.B.A. students as proxies for investors to examine how the readability of selected benchmark performance measures and benchmark performance consistency jointly influence investors' judgments on the firm's future performance, hereafter, performance

judgment." We consider two performance benchmarks: (1) performance relative to previously issued management guidance, hereafter, "guidance performance," and (2) performance compared to that in the same quarter one year ago, hereafter, "trend performance." Research shows that managers generally

We also contribute to the literature by identifying understanding" as a mechanism through

lead to mixed evaluative outcomes, such as better performance in terms of beating one benchmark, but

the company, and then present the earnings release, which contains four paragraphs. The first and second paragraphs contain management's comments on current-quarter performance relative to previously issued management guidance, where we manipulate the " of guidance performance.

Since nonprofessional investors are the primary beneficiaries of the plain English guidelines promoted by the SEC, we are mainly interested in the impact of readability for such investors. We consider our experimental task to involve moderate integrative complexity since it requires participants to integrate the implications of the firm's trend performance and guidance performance. Elliott, Hodge, Kennedy, and Pronk (2007)

0.01, suggesting that our manipulation of trend performance valence is successful. As a check on our manipulation of positive versus negative guidance performance valence, we ask participants to indicate the extent to which the firm's current-quarter earnings performance is favorable compared to prior management guidance, on an 11-point scale with endpoints 0 ¼ "extremely unfavorable" and 10 ¼ "extremely favorable." The overall mean rating of 5.95 in

FIGURE 1
Predicted Effects of Readability and Trend Performance Valence

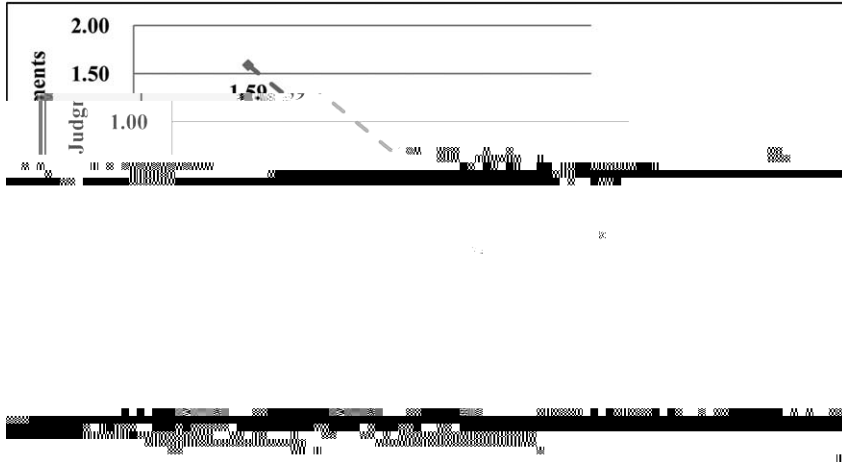Panel A: Inconsistent Benchmark Performance
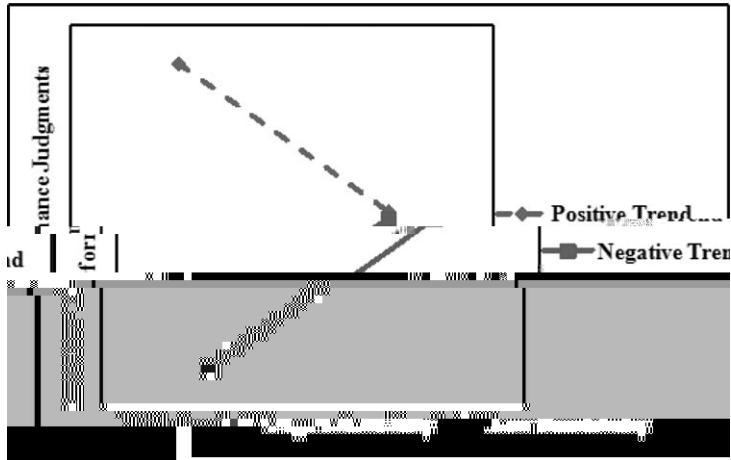
Panel B: Consistent Benchmark Performance

We conduct an analysis of variance (ANOVA) for participants' performance judgments, with readability, trend performance valence, and benchmark performance consistency as the independent variables. The results are shown in Table 1, with Panel A showing the descriptive statistics and Panel B presenting the three-way ANOVA results. Consistent with H1, Table 1, Panel B shows a significant three-way interaction effect ($F = 5.05$, $p = 0.03$), supporting our prediction that the effect of readability on performance judgment is larger when benchmark performance is inconsistent, with the directional effect varying with trend performance valence. We also find a significant main effect of trend performance valence ($F = 10.23$, $p < 0.01$), and a significant interaction effect between

FIGURE 2
Effects of Readability and Trend Performance Valence

Panel A: Inconsistent Benchmark Performance

Panel B: Consistent Benchmark Performance
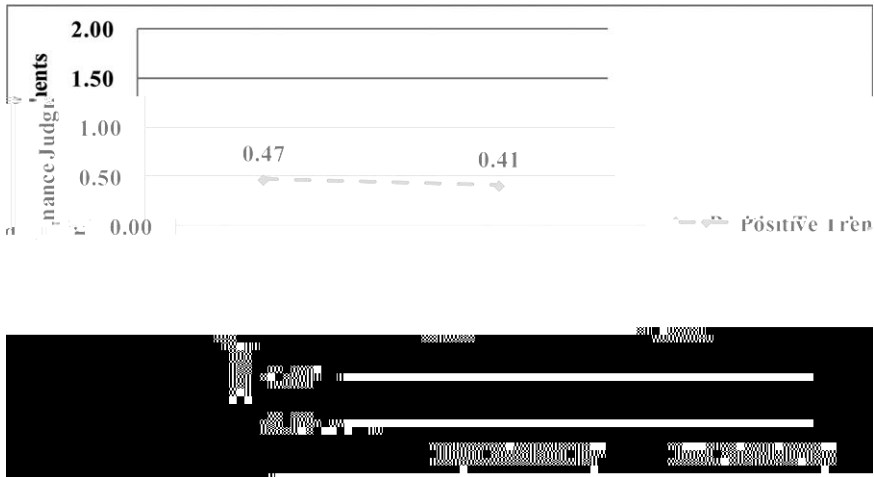
significantly higher in the positive trend performance condition than those in the negative trend performance condition when readability is high (t ¼ 3.58, p < 0.01), but insignificantly so when readability is low (t ¼ 0.77, p ¼ 0.45). These results suggest that high readability helps investors distinguish between the positive and negative trend performance in the presence of inconsistent benchmark performance.

Table 2, Panel B presents the performance judgment results when benchmark performance is consistent. We find that participants' performance judgments are higher in the positive trend performance condition than those in the negative trend performance condition (0.44 versus 0.77, F ¼ 5.57, p ¼ 0.02). Neither the main effect of readability (F ¼ 0.01, p ¼ 0.93) nor the interaction effect

between readability and trend performance valence (F ¼ 0.00, p ¼ 0.98) is significant, suggesting no

To measure   understanding," psychology studies often ask participants to complete multiple-choice questions that test the correctness of their inferences based on the message they read (Melby-Lervag and Lervag 2014). To choose a correct answer from different options that provide alternative interpretations of the message, participants must understand not only the explicitly stated information, but also the overall implication of the text (Rawson and Dunlosky 2002; Miele and Molden 2010). Accordingly, we measure participants' understanding of the firm's performance by asking them to evaluate changes (increase, remain constant, or decrease) in four trend performance indicators (net sales, unit sales volume, earnings per share, and earnings per share from continuing operations) and four guidance performance indicators (net sales, sales growth, earnings per share, and earnings per share from continuing operations).[14] A participant's response is coded as 1 if his or her answer is correct, and 0 otherwise. We then add the four coded understanding measures on trend performance to form   trend understanding," and the four coded understanding measures on guidance performance to form   guidance understanding." We subtract guidance understanding from trend understanding to give   net understanding,"

measure as that in the main experiment.[16] Untabulated results from the SEM analysis show that higher readability of positive guidance performance leads to higher net understanding (coefficient ¼ 0.35, p < 0.01, one-tailed), which then results in higher performance judgment (coefficient ¼ 0.35, p < 0.01, one-tailed). As in the main experiment, processing fluency is not associated with performance judgment (coefficient ¼ 0.13, p ¼ 0.33). The χ^2 statistics suggest that our model has a good model fit (χ^2 ¼ 3.30, df ¼ 2, p ¼ 0.19).

VII. CONCLUSION

We conduct two experiments using M.B.A. students to investigate how readability and benchmark performance consistency jointly influence investors' judgments. In our main experiment, we manipulate the readability and valence of trend performance, and whether the sign of trend performance valence and that of guidance performance valence are consistent with each other. We find that readability influences investors' judgments to a greater extent when the two performance valences are inconsistent than when they are consistent. In the presence of inconsistent benchmark performance, high readability of trend performance helps investors better understand the firm's performance than low readability, which in turn leads to higher performance judgments when trend performance is positive, but lower performance judgments when the trend performance is negative. In a supplementary experiment, we

voluminous, it is possible that investors lose focus and become indifferent to readability in such a situation. Future research can investigate this issue. Second, we examine only one particular context, involving benchmark performance inconsistency in terms of contradictions in performance based on prior management guidance and year-ago quarter performance. Other possible contexts include contradictions in inferences based on different financial statement line items, such as revenue versus net earnings or current earnings versus future prospects.

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APPENDIX A

Examples of Strategic Use of Readability in Selected Content

Example No. 1: Excerpt from United Airlines' Earnings Release
United Announces Full-Year and Fourth-Quarter 2012 Results

CHICAGO, January 24, 2013 —United Continental Holdings, Inc. (NYSE: UAL) today reported full-year 2012 net income of $589 million, or $1.59 per diluted share, excluding $1.3

Key Events Over the Last Three Months

> Dulaglutide was submitted for regulatory review in both the U.S. and Europe as a potential treatment for type 2 diabetes.
> The U.S. rolling submission was completed for ramucirumab as a single-agent treatment for patients with advanced gastric cancer who have had disease progression after initial chemotherapy. A submission for ramucirumab for the same indication was also made in Europe.
> Top-line results were announced from two global Phase III studies of ramucirumab.

Third-Quarter Reported Results

In the third quarter of 2013, net income and earnings per share decreased to $1.203 billion and $1.11, respectively, compared with third-quarter 2012 net income of $1.327 billion and earnings per share of $1.18. The decreases in net income and earnings per share were driven by the early payment of the exenatide revenue-sharing obligation in the third quarter of 2012, partially offset by higher operating income and a lower effective tax rate in the third quarter of 2013. Earnings per share also benefited from a lower number of shares outstanding in the third quarter of 2013 compared to the third quarter of 2012.

APPENDIX B

Eight Manipulated Conditions in the Main Experiment

Consistent Benchmark Performance Conditions
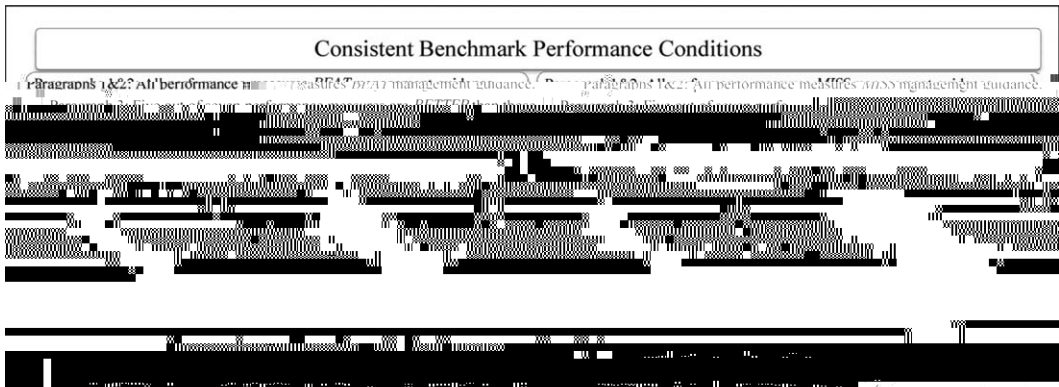
APPENDIX C

Panel A: Manipulation of Readability and Trend Performance Valence in the Main Experiment

APPENDIX C (continued)

Panel B: Readability: Positive Quarterly Results Summary (Positive Version—the word "positive" is not shown to the participants)

	2012 Q1	Compared with 2011 Q1	Sources/Reasons
Net sales	$19.8 billion	" Grew 6%	Foreign exchange impacts of 7% as U.S. dollar weakened.
Unit sales volume	NA	" Increased 3%	General economic conditions, market recovery, prior-year acquisitions and share gains.
Gross margin	52.6%	" Expanded 2.9%	Price increases, lower commodity costs, and manufacturing cost savings.
Operating margin	22.5%	# Decreased 1.6%	Higher SG&A expenses as a percentage of net sales, partially offset by higher gross margin.
Earnings per share	$1.08	" Increased 1%	Higher net sales, partially offset by the loss on sale of Acxon in Japan.
Earnings from discontinued operations	$0.24 billion	# Decreased 2%	Loss on sale of Acxon in Japan.
Earnings from continuing operations	$3.02 billion	" Up 3% savings.	Foreign exchange impacts as U.S. dollar weakened, higher net sales,

ating margin

APPENDIX D

Manipulation of Readability in the Supplementary Experiment

	2013 Q1	Guidance	Change
Net sales	$19.8 billion	$19.3 billion	" $0.5 billion higher
Sales growth	1%	3% to 0%	" higher
Sales volume growth	3%	4%	# lower
Cash position	$5.4 billion	$5.3 billion	" $0.1 billion higher
Earnings per share from discontinued operations	$0.07	$0.09	# $0.02 lower
Earnings per share from continuing operations	$1.01	$0.94	" $0.07 higher
Earnings per share	$1.08	$1.03	" $0.05 higher

Net sales were $19.8 billion, $0.5 billion higher than company's guidance of $19.3 billion. Sales growth was 1 percent, higher than a guidance range of flat to 3 percent. Sales volume growth was 3 percent, lower than the guidance of 4 percent increase. Cash position was $5.4 billion, $0.1 billion higher than the guidance of $5.3 billion. Earnings per share from discontinued operations were lower than guidance of $0.09 at $0.07. Higher than company's guidance of $0.94 for earnings per share from continuing operations and $1.03 for earnings per share, earnings per share from continuing operations were $1.01 and earnings per share were $1.08.