The American Accounting Association is the largest community of accountants in academia. Founded in 1916, we have a rich and reputable history built on leading-edge research and publications. The diversity of our membership creates a fertile environment for collaboration and innovation. Collectively, we shape the future of accounting through teaching, research and a powerful network, ensuring our position as thought leaders in accounting.

The Accounting Review
Vol. 92, No. 4
July 2017

Disclosure Readability and the Sensitivity of Investors' Valuation Judgments to Outside Information

American Accounting Association | Publications

The American Accounting Association is the copyright holder of this article and retains the worldwide rights to publish, reproduce, distribute, publicly display and/or license the Material in this article for any future editions and versions of this Work, derivative works based on this article (including translations and adaptations), related ancillaries and supplements, and in promotional materials in all print, digital and wireless and/or electronic formats.

Further distribution of this article is strictly prohibited. Written application must be made to the American Accounting Association, 9009 Town Center Parkway, Lakewood Ranch, FL 34202, for permission to reproduce any of the contents of this article, other than for use in courses of instruction. For additional information about the AAA, please visit http://aaahq.org where you can also browse the abstracts of AAA journal articles.

American Accounting Association

Thought Leaders in Accounting

The Accounting Review • Issues in Accounting Education • Accounting Horizons
Accounting and the Public Interest • Auditing: A Journal of Practice & Theory
Behavioral Research in Accounting • Current Issues in Auditing
Journal of Emerging Technologies in Accounting • Journal of Information Systems
Journal of International Accounting Research
Journal of Management Accounting Research • The ATA Journal of Legal Tax Research
The Journal of the American Taxation Association

Online Early — Preprint of Accepted Manuscript

This is a PDF file of a manuscript that has been accepted for publication in an American Accounting Association journal. It is the final version that was uploaded and approved by the author(s). While the paper has been through the usual rigorous peer review process for AAA journals, it has not been copyedited, nor have the graphics and tables been modified for final publication. Also note that the paper may refer to online Appendices and/or Supplements that are not yet available. The manuscript will undergo copyediting, typesetting and review of page proofs before it is published in its final form, therefore the published version will look different from this version and may also have some differences in content.

We have posted this preliminary version of the manuscript as a service to our members and subscribers in the interest of making the information available for distribution and citation as quickly as possible following acceptance.

The DOI for this manuscript and the correct format for citing the paper are given at the top of the online (html) abstract.

Once the final published version of this paper is posted online, it will replace this preliminary version at the specified DOI.

Disclosure Readability and the Sensitivity of Investors' Valuation Judgments to Outside Information

H. Scott Asay
Assistant Professor
University of Iowa
scott-asay@uiowa.edu

W. Brooke Elliott
Professor and Roedgers Fellow in Accountancy
And Professor Ken Perry Faculty Fellow
University of Illinois at Urbana-Champaign
wbe@illinois.edu

Kristina M. Rennekamp
Assistant Professor
Cornell University
kmr52@cornell.edu

American Accounting Association
preprint
accepted manuscript

Editor's Note: Accepted by Eddy Cardinaels
Submitted November 2014
Accepted August 2016

Acknowledgements: We thank Spencer Anderson, Eddy Cardinaels (editor), Mike Durney, Scott Emett, Stephanie Grant, Joseph Johnson, Tracie Majors, Mark Nelson, two anonymous reviewers, and workshop participants at the University of Iowa, the 2014 ABO Conference, and the 2014 BYU Accounting Research Symposium for their helpful comments on earlier versions of this paper.

Disclosure Readability and the Sensitivity of Investors' Valuation Judgments to Outside Information

ABSTRACT

Prior literature suggests that investors react less strongly to information in less readable disclosures. We extend this literature by considering how disclosure readability affects the sensitivity of investors' valuation judgments to the information contained in *outside* (i.e., non-firm) sources of information. Using an experiment, we present investors with a disclosure containing mixed news about the valence of firm performance, and this disclosure varies in readability. We find that investors who initially view a less readable firm disclosure provide valuation judgments that incorporate the outside information to a greater extent, such that their valuation judgments are more sensitive to whether outside information is relatively more or less supportive of management's positive forward-looking statements. We find evidence that this occurs primarily because investors who view a less readable initial disclosure feel less comfortable evaluating the firm and, in turn, rely more on the outside information. We also find that viewing a less readable firm disclosure indirectly increases the extent to which participants search outside information. Combined, our results suggest that investors' valuation judgments may be more influenced by outside sources of information when managers provide less readable firm disclosures, potentially limiting the extent to which managers can benefit from strategically issuing less readable disclosures to obfuscate poor performance. These findings also imply that investors might over-rely on more readable disclosures while discounting outside sources of information about the firm.

American Accounting Association
preprint
accepted manuscript

Keywords: *voluntary disclosure, readability, information search, information processing*

Data availability: *Contact the authors.*

I. INTRODUCTION

Prior research in the accounting literature finds that investors react less strongly to information provided in less readable disclosures (see, e.g., You and Zhang 2009; Miller 2010; Rennekamp 2012; Lawrence 2013; Tan, Wang, and Zhou 2015). This finding is consistent with theoretical work that suggests that market reactions are likely to be slowed when information is more difficult to extract (Grossman and Stiglitz 1980; Bloomfield 2002; Hirshleifer and Teoh 2003). When evaluating a firm, however, investors and other interested parties can also obtain firm-related information from a variety of other non-firm sources, such as analyst reports and news media (hereafter "outside information"). In this paper, we examine whether the readability of a firm disclosure affects the extent to which investors seek out and rely on this type of outside information.

We draw on prior work suggesting that less readable information reduces confidence in making related judgments (e.g., Alter and Oppenheimer 2009) and predict that investors will feel less comfortable evaluating a firm based on a less readable disclosure. As a result, we expect that investors will be more likely to incorporate outside information into their valuation judgments after viewing a less readable firm disclosure. This result would suggest that issuing a less readable disclosure may reduce managers' ability to communicate information to investors, in that investors may shift their reliance away from firm disclosures and towards outside information. This result would also suggest an unintended consequence of the SEC's recommendation that firms issue more readable disclosures – more readable disclosures may lead investors to over-rely on firm disclosures by reducing their propensity to incorporate outside information into their judgments. We further examine two non-exclusive paths through which less readable firm disclosures could lead to greater incorporation of outside information. First,

American Accounting Association
preprint
accepted manuscript

we examine whether a less readable firm disclosure increases the extent to which investors engage in information search.[1] Second, we examine whether investors rely on that outside information to a greater extent. In other words, when investors do not feel they can rely on current firm disclosures, and thus do not feel comfortable assessing future firm performance, we predict that investors will be more likely to search for, and rely on, outside information sources to evaluate the firm as an investment.

To test our predictions, we use a 2 x 2 between-subjects experiment. After providing an initial valuation judgment for the firm, participants view an earnings announcement indicating that, despite an increase in sales and net income, the firm has performed below expectations in the most recent quarter. In addition, the disclosure indicates that management expects future performance to improve. Thus, overall, the valence of the news about firm performance is mixed. We manipulate the readability of this disclosure (more vs. less readable) by varying whether the disclosure generally follows or violates the SEC's suggestions provided in the Plain English Handbook (SEC 1998). After reading the disclosure, participants provide judgments that capture how comfortable they feel evaluating the firm (i.e., judgments of reliance on the firm disclosure and confidence in evaluating the firm) and have the option to view three sources of outside information (an individual analyst's report, a report summarizing the consensus forecast of all analysts that follow the firm, and a Yahoo! News story). We manipulate whether the outside information is relatively more or less supportive of managers' claims that future performance is likely to improve. This manipulation allows us to observe whether investors are more likely to

American Accounting Association
preprint
accepted
manuscript

[1] We use the term "information search" to refer broadly to the acquisition and evaluation of information (Russo and Carlson 2002). In our context, investors who engage in a greater degree of information search may (1) access one or more outside sources of information, (2) spend more time analyzing that information, and (3) encode the content of that outside information to a greater extent. While accessing and analyzing outside information are both part of the information search process itself, encoding the content of that outside information is a product of that process. As we describe in more detail in Section 3, we use measures that capture participants' access, analysis, and encoding of outside information as proxies for the intensity and effectiveness of a search process.

incorporate outside information into their valuation judgments when an initial firm disclosure is less readable. If this is the case, investors' valuation judgments should be more sensitive to whether the outside information supports managers' positive assertions about future performance when the initial firm disclosure is less readable than when it is more readable.[2] After participants view the outside information (if they choose to do so), they make final valuation judgments and provide other debriefing responses and demographic information.

Consistent with our expectations, we find that when participants initially view a less readable firm disclosure they feel less comfortable evaluating the firm, and their valuation judgments are more sensitive to whether the outside information supports managers' claims that future performance is likely to improve.[3] In addition, we provide evidence that this increased sensitivity occurs primarily because participants rely on the outside information to a greater extent when they initially view a less readable firm disclosure. Specifically, while we find that less readable initial firm disclosures *indirectly* increase participants' propensity to search the outside information by decreasing their comfort, participants who initially view a less readable firm disclosure are no more likely, on average, to search the outside information (i.e., there is no main effect of disclosure readability on accessing, analyzing, and/or encoding of the outside information). Rather, we find that investors rely more on that outside information after viewing a less readable disclosure because they feel less comfortable evaluating the firm. In additional

American Accounting Association
preprint
accepted
manuscript

[2] We use the term "sensitivity" to refer to the degree of change in a dependent variable in response to a change in an independent variable. Thus, a valuation judgment is more sensitive to outside information if a change in the content of the outside information (e.g., more vs. less supportive of managers' positive assertions about future performance) has a larger effect on the valuation judgment.

[3] Elliott, Rennekamp and White (2015) also examine a setting where linguistic characteristics of a disclosure affect investors' valuation judgments via feelings of investor comfort. However, their paper differs from ours in at least two important respects. First, they examine the effects of linguistic concreteness (as opposed to readability) on investors' feelings of comfort. The two linguistic characteristics are distinct, as concreteness affects investors' ability to visualize information, whereas readability relates more to investors' ability to process information in the first place (Elliott et al. 2015). Second, their study examines investors' reactions to a given disclosure in light of its characteristics, whereas our study is one of the first to examine how disclosure characteristics affect the search for (and reliance on) *outside* information.

analyses we also find that, while disclosure readability does not directly affect the specific type(s) of outside information sources that investors access, the valuation judgments of those who access information from analysts (an analyst report or analyst summary consensus) are more sensitive to the content of those outside sources of information.

Finally, we also find that for those participants who do not access any of the outside information sources the less readable disclosure leads to lower valuation judgments. This result suggests that issuing less readable disclosures might undermine managers' ability to convince investors that future performance is likely to improve. This may be true even when outside sources of information *support* management's claims that future performance will improve, because investors will not always seek out this information. Overall, our findings suggest that issuing less readable disclosures limits managers' ability to convince investors that performance will improve in the future, and increases investors' propensity to rely on outside sources of information rather than on a less readable firm disclosure.

American Accounting Association
preprint
accepted manuscript

Our study capitalizes on the comparative advantage of experiments in at least two ways (Libby, Bloomfield, and Nelson 2002). First, our experiment allows us to isolate the effects of disclosure readability and independently manipulate the content of outside information. These factors are likely confounded in practice as prior work finds that readability of firm disclosures is negatively associated with firm performance (e.g., Baker and Kare 1992; Courtis 1998; Li 2008). Second, our experiment allows us to measure participants' feelings of comfort with evaluating the firm and track characteristics of their information search (e.g., number of sources accessed, time spent analyzing those sources, and encoding of content) after initially viewing a more or less readable disclosure. This allows us to differentiate between the potential for disclosure readability to affect (1) the search for information from outside sources versus (2) the extent to

which investors rely on the outside information when evaluating the firm.

Our findings contribute to the growing literature examining how investor reactions are influenced by the readability and other linguistic characteristics of firm disclosures (for reviews, see Li 2010; Brennan and Merkl-Davis 2013; Libby and Emett 2014). We extend this literature by providing evidence that increasing disclosure readability decreases investors' sensitivity to the content of outside information about the firm. Consistent with prior empirical work (e.g., Li 2008; Rennekamp 2012) and the SEC's stated goals in their Plain English Handbook (SEC 1998), this finding suggests that issuing more readable disclosures may increase disclosure transparency and help managers to communicate their private information more effectively. However, because outside information about the firm may include positive and/or negative cues about firm value, this finding also suggests that investors might over-rely on more readable disclosures by failing to incorporate outside information into their judgments.

In addition, while prior work primarily argues that managers might benefit from issuing less readable disclosures during periods of poor performance, our findings suggest that the benefits to this strategy are likely to be limited. If the content of outside information is correlated with firm performance, then our findings suggest that issuing a less readable disclosure will increase investors' propensity to incorporate that information into their judgments while also undermining managers' ability to communicate their private information about their recent performance or future plans. Further, our findings suggest that there may be benefits to providing more readable disclosures that have not yet been considered in the literature. For example, prior work suggests that firms can encourage optimism by using causal narratives to describe why performance will improve in the future (Sedor 2002; Kadous, Krische, and Sedor 2006). Our results complement this prior work and suggest that this strategy is likely to be more effective

American Accounting Association
preprint
accepted
manuscript

when the causal narrative is easy to read. When the causal narrative is difficult to read, investors are likely to either discount managers' positive assertions about the future or place greater weight on outside information sources that may conflict with managers' assertions.

Finally, our results contribute to the broader literature on investors' search for information. While many studies investigate investors' reactions to the style and content of various disclosures and information sources, relatively few studies investigate what drives investors' decisions to use these sources in the first place (Loibl and Hira 2009; Drake, Roulstone, and Thornock 2012). From a methodological perspective, we contribute to this literature by allowing participants to choose which (if any) sources of outside information they search. From an empirical perspective, we contribute to this literature by providing evidence that investors' choice to seek out and rely on outside information may be driven, at least in part, by investors' lack of comfort with evaluating a firm after receiving less readable firm disclosures. This finding complements prior work by documenting an important downstream effect of the extent to which investors feel comfortable evaluating a firm (Elliott et al. 2015).

The remainder of the paper is organized as follows. We provide background and develop hypotheses in Section 2. We discuss our experimental design and results in Sections 3 and 4, respectively. Section 5 concludes.

American Accounting Association
preprint
accepted manuscript

II. PREVIOUS LITERATURE, THEORY, AND HYPOTHESES

The Effects of Disclosure Readability on Financial Statement Users

Prior work in accounting indicates that disclosure formats can affect the acquisition, evaluation, and weighting of information contained within that disclosure (see e.g., Maines and McDaniel 2000; Hodge, Kennedy, and Maines 2004; Elliott 2006; Elliott, Hodge, Kennedy, and Pronk 2007). Recent work sheds light on how disclosure readability can have similar effects. For

example, Li (2008) argues that less readable disclosures could make it more difficult for investors to extract information contained within a disclosure, and Rennekamp (2012) argues that less readable disclosures could lead investors to view that information as less reliable such that they react less to that information, even if they acquire it.

Consistent with these arguments, You and Zhang (2009) find that the market underreacts to longer 10-K filings. Miller 2010 develops a proprietary measure of disclosure readability based on the SEC's plain English guidelines (SEC 1998) and finds that less readable 10-Ks reduce trading volume, particularly among small investors. In experimental setting, Rennekamp (2012) shows that investors react less strongly to less readable firm disclosures. Also in an experimental setting, Tan, Wang, and Zhou (2015) find that more readable disclosures can improve investors' understanding of information when the disclosure provides inconsistent signals about a firm's performance, and Tan, Wang and Zhou (2014) find that investors rely more on the tone, or general sentiment, of a disclosure when it is less readable. Taken together, these findings indicate that firms might realize some benefits from issuing less readable disclosures, particularly when those disclosures contain at least some negative information. In the next section, we explore how any benefits to this type of strategic behavior might be at least partially offset by related costs.

American Accounting Association
preprint
accepted
manuscript

Disclosure Readability and Outside Information

Consistent with prior work, we expect disclosure readability to affect investors' processing fluency. Processing fluency refers to an individual's subjective feeling about how easy it is for them to process a given piece of information, and prior literature finds that less readable information decreases feelings of processing fluency (see, e.g., Alter, Oppenheimer, Epley, and Eyre 2007); Rennekamp 2012). Further, increased processing fluency leads

individuals to perceive information as more true and to feel more comfortable making related judgments (Alter and Oppenheimer 2009), consistent with the idea that the language used in firm disclosures affects the extent to which investors feel comfortable evaluating the firm as an investment (Elliott et al. 2015). These findings suggest that investors will feel less comfortable evaluating a firm after receiving disclosures that are less readable.[4]

Prior work on disclosure readability focuses on the determinants of disclosure readability and how disclosure readability affects reactions to the news contained *within that disclosure*. In a financial reporting context, however, investors can obtain firm-related information from a variety of sources. For example, rather than relying strictly on firm disclosures, investors can also turn to outside information such as analyst reports and news media. This outside information can provide an alternative perspective and help investors calibrate their expectations for the firm, which may be particularly useful when investors are more uncertain about the firm's future.

This discussion suggests that firms' ability to influence the narrative surrounding firm performance might be undermined by less readable disclosures. Specifically, if investors feel less comfortable evaluating a firm based on a less readable disclosure, less readable firm disclosures might increase investors' propensity to seek out and rely on outside information, thereby increasing the extent to which investors incorporate outside information into their evaluation of the firm. As a result, we expect the content of outside information to influence investors' valuation judgments to a greater extent when a firm disclosure is less readable. In other words, we predict that investors' valuation judgments will be more sensitive to outside information (i.e.,

American Accounting Association
preprint
accepted
manuscript

[4] Processing fluency and investors' feelings of comfort are related, but conceptually distinct. Processing fluency refers to the subjective feeling of ease to process information, whereas investors' comfort is a positive feeling that results from that processing fluency. This is consistent with prior research where processing fluency itself is distinguished from the feelings that it elicits among individuals (see, e.g., Alter and Oppenheimer 2009).

the effect of outside information on investors' valuation judgments will be magnified) when evaluating a firm based on a less readable disclosure (see Figure 1, Panel A).

> *H1: Investors' valuation judgments will be more sensitive to outside information after viewing a less readable initial firm disclosure.*

[INSERT FIGURE 1]

Information Search and Reliance on Outside Information

There are at least two possible reasons that investors' valuation judgments might be more sensitive to outside information after viewing a less readable initial firm disclosure. First, investors might search outside information to a greater extent after viewing a less readable initial firm disclosure. A fundamental part of any decision making process is deciding when to stop evaluating information and make a decision (Russo and Carlson 2002). Prior work in accounting suggests that practitioners are less likely to search for additional information when they feel confident in the information already at hand (Birnberg and Shields 1984). Similarly, prior work in psychology finds that people tend to defer finalizing judgments and decisions when the relevant information is less readable. For example, Novemsky, Dhar, Schwarz, and Simonson 2007 find that consumers who read product descriptions that are less readable defer their product choices, presumably because they infer that making (and committing to) an ultimate choice is more difficult. These findings suggest that individuals who feel more comfortable making a decision based on the current set of information might expect to benefit less from engaging in additional information search and therefore be more likely to terminate the search for information. Similarly, investors who feel less comfortable evaluating a firm based on a firm disclosure might expect to benefit more from searching for outside information.[5]

American Accounting Association
preprint
accepted
manuscript

[5] While this prediction has solid theoretical underpinnings, it is also plausible that investors who view less readable disclosures may be less likely to search outside information given they (1) have already expended greater effort in processing the initial disclosure and (2) may be more discouraged in general.

Second, investors' valuation judgments might be more sensitive to outside information after viewing a less readable initial firm disclosure because they rely on that information to a greater extent (holding constant the degree of information search). Prior work indicates that as individuals become more confident in making a judgment, they become more likely to discount or disregard new information that may contradict their current beliefs (see, e.g., Pyszczynski and Greenberg 1987; Nickerson 1998). Similarly, investors who are less willing to rely on a firm disclosure and feel less confident evaluating a firm after reading a firm disclosure may be more likely to discount managers' assertions about the future in favor of outside information.

Overall, this discussion suggests that, to the extent that investors feel less comfortable evaluating a firm after viewing a less readable firm disclosure, they may increase the intensity and effectiveness of the information search process and/or rely on that outside information to a greater extent when evaluating a firm. As a result of either of these processes, less readable firm disclosures could lead investors to incorporate the content of outside information into their valuation judgments to a greater extent, on average. Both of these processes, however, are dependent on the idea that less readable disclosures lead investors to feel less comfortable evaluating a firm. We therefore predict that:

American Accounting Association
preprint
accepted
manuscript

H2: Investors will feel less comfortable evaluating a firm after viewing a less readable initial firm disclosure.

H3: Investors' valuation judgments will be more sensitive to outside information after viewing a less readable initial firm disclosure because the decrease in comfort increases the intensity and effectiveness of their search of outside information.

H4: Investors' valuation judgments will be more sensitive to outside information after viewing a less readable initial firm disclosure because the decrease in comfort increases the extent to which they rely on that outside information.

While either H3 or H4 could produce the pattern predicted by H1 (and depicted in Figure 1, Panel A), the processes are distinct. Whereas H3 predicts that disclosure readability will moderate the effect of outside information on valuation judgments by influencing whether and how much investors search outside information, H4 predicts that disclosure readability will moderate the effect of outside information on valuation judgments by influencing the extent to which they *rely* on that outside information (holding constant the extent to which they search outside information). From a theoretical perspective, H3 and H4 are both dependent on the effect of disclosure readability on investors' comfort (H2) (see Figure 1, Panel B).

American Accounting Association

III. METHOD

Participants

Participants are 203 individuals recruited from Amazon's Mechanical Turk (AMT) platform in exchange for a $1.50 payment.[6] Recent research suggests that AMT workers do not exert less effort on experimental tasks than more traditional participants (Farrell, Grenier, and Leiby 2016), and accounting research is increasingly turning to AMT to recruit experimental participants when the experimental task does not require specialized accounting knowledge (see, e.g., Rennekamp 2012; Dworkis 2013; Krische 2014, Rennekamp, Rupar, and Seybert 2015; Koonce, Miller, and Winchel 2015).

preprint accepted manuscript

The average participant in our study is 34.3 years old and has completed an average of 0.93 and 0.82 accounting and finance courses, respectively. Of these participants, 28.7% have invested in individual stocks in the past and 51.2% plan to do so in the future. Since our study deals with linguistic characteristics of disclosures, we specifically recruit participants who (1) live in the United States and (2) consider English to be their native language.

[6] The experiment in this study was approved by the Institutional Review Board (IRB) for Human Participants at the university where online administration of the study was completed.

Design and Manipulations

Participants are told to assume the role of a prospective investor in Jackson's Sports Stores, Inc., a hypothetical firm adapted from a real firm in the sporting goods industry. To test our hypotheses, we use a 2 x 2 between-subjects design. We manipulate the readability of a press release provided by the firm by using linguistic and formatting choices that either do (in the more readable condition) or do not (in the less readable condition) conform to suggestions in the SEC's Plain English Handbook (SEC 1998). For example, the linguistic characteristics that we employ to make the disclosure more readable include using short sentences, active voice, fewer hidden verbs, no superfluous words, writing in the positive, simple synonyms, more personal pronouns, and keeping related information in close proximity. The formatting characteristics that we use include clear headings, an appropriate layout with white space, and bullet points and tables to organize information. We manipulate these features simultaneously to ensure a powerful manipulation of the construct of readability (see Appendix A).

We also manipulate whether three sources of outside information are more or less supportive of management's claims in the initial press release that future performance is likely to improve and that the firm represents a good investment opportunity. Specifically, we provide participants with an opportunity to view up to three sources of outside information – an individual analyst's report, a report summarizing the consensus forecasts and recommendations of all analysts following the firm, and a Yahoo! Finance news story – each of which contains information that is either more or less supportive of management's claims.

For the analyst report, the more supportive condition identifies more strengths and opportunities than weaknesses and threats in a SWOT analysis and recommends Jackson's stock as a "Buy". In the less supportive condition, the analyst report identifies more weaknesses and

American Accounting Association
preprint
accepted
manuscript

threats than strengths and opportunities in a SWOT analysis and recommends Jackson's stock as a "Hold" (see Appendix B). For the consensus analyst report, the more supportive condition shows that the mean analyst recommendation has increased over the previous week (on a scale from 1.0 = sell to 5.0 = strong buy), and the number of analysts following the firm has increased over the previous month. The less supportive condition shows the reverse – the mean analyst recommendation has decreased over the previous week and fewer analysts are following the firm over the previous month (see Appendix C).

Finally, for the Yahoo! Finance News story, the more supportive condition points out in the article that analysts have mixed opinions about sporting goods stores but have reiterated a "Buy" rating for Jackson's. Further, the article suggests that (1) sporting goods stores are good candidates for online retailing and that (2) sales of high-margin home gym equipment represent a good source of future revenue, both of which were discussed by management in the initial disclosure as reasons to expect positive future performance. In the less supportive condition, the article again suggests that analysts have mixed opinions about sporting goods stores, but reiterates a "Buy" rating for a *main competitor* of Jackson's, rather than Jackson's itself. The article also suggests that (1) sporting goods stores are not good candidates for online retailing and (2) discusses that products catering to hunters and fisherman represent a good source of future income, both of which contradict the discussion by management in the initial disclosure as to why they expect positive future performance (see Appendix D).

American Accounting Association
preprint
accepted
manuscript

Task and Procedure

Initial Valuation Judgment. After reading a brief introduction describing Jackson's Sports Stores, Inc., participants provide an initial valuation judgment for Jackson's by rating an appropriate common stock valuation judgment for Jackson's on an 11-point scale (1 = very low,

11 = very high). This initial valuation judgment serves as a baseline for measuring investors' reactions to the materials containing our manipulations.

Earnings Announcement. Next, participants view an earnings announcement describing Jackson's most recent quarterly performance. This earnings announcement contains our readability manipulations, as described above. While we manipulate the readability of this earnings announcement, we hold actual performance constant across conditions. In all cases, the performance information is mixed. The firm's sales and net income increased compared to the same quarter of the prior year, but fell short of firm guidance. Further, in all conditions management expresses that the firm has performed below expectations. We also hold constant that, despite performing below expectations in the quarter, management expresses optimism about the long-term prospects of the firm and describes steps it is taking to turn things around.

Investor Comfort. After reviewing the earnings announcement, participants rate the extent to which they agree with the statements "I felt like I could rely on the information in the press release" and "I am confident in my ability to evaluate Jackson's as an investment" (1 = strongly disagree to 7 = strongly agree). As we discuss in more detail below, we use a principal component analysis based on these two measures to estimate a single factor score, which we call "Investor Comfort" (Elliott et al. 2015).[7]

Outside Information. Next, participants are told that investors have the option of accessing many sources of information before making an investment decision about a company, and that they have the option to view some outside sources of information before making a final evaluation of Jackson's. They are then provided with the opportunity to view three outside information sources: an individual analyst's report (GlobalMeta Analyst Report), a report

[7] We measure investor comfort before participants are given the opportunity to access outside sources of information because accessing, analyzing, and encoding the content of the outside information would likely affect investor comfort and bias any estimate of this relationship (due to simultaneity).

American Accounting Association
preprint
accepted
manuscript

summarizing the analyst consensus forecast (Analyst Consensus Summary), and a news article (Yahoo! Finance News Story). These three sources contain our manipulations of whether outside sources of information (external to the firm) are more or less supportive of management's claims that future performance is expected to improve. We are careful to explain that they may review any of the sources they would like, but if they are ready to make their investment evaluation, then they do not need to view any of the sources. We provide these instructions so that investors do not feel compelled to access more information than they feel is necessary.[8]

Final Valuation Judgments. Once investors indicate they are ready to make an investment evaluation, they make a final valuation judgment on the same scale as the initial judgment.[9]

Additional Measures. Participants also provide a rating of managers' competence (0 = very incompetent, 100 = very competent) and trustworthiness (0 = very untrustworthy, 100 = very trustworthy), the two components of management credibility.[10] Participants then answer comprehension check questions about the initial press release and any of the outside sources of information that they accessed. Comprehension checks related to the initial press release ask about (1) the % change in revenues in this quarter, compared to the same quarter of the prior year, (2) the reported EPS in the most recent quarter, and (3) the CEO's expressed expectations for remodeling locations in the future. Comprehension checks related to the outside sources of

American Accounting Association
preprint
accepted manuscript

[8] We also pay participants a flat fee rather than providing them with performance-based pay as our experiment is designed to mimic the actual environment where there is variation in information search. Strong incentives related to measures of performance or accuracy could have driven most participants to access most or all of the outside information sources, creating ceiling effects and precluding us from conducting a meaningful test of our theory.
[9] The valuation judgments capture participants' general impressions about firm value without requiring complex calculations. Although the scale descriptions are somewhat vague, random assignment of participants to conditions should alleviate any concerns that results might be driven by how the labels on the valuation scale are interpreted.
[10] We find that participants view managers as being less competent ($F(1, 201) = 2.09$; $p = 0.075$) and less trustworthy ($F(1, 201) = 7.41$; $p = 0.004$) when they initially view a less readable disclosure. These findings are consistent with prior work (e.g., Rennekamp [2012]; Tan et al. [2015]). In addition, we find participants view managers as being less competent ($F(1, 201) = 10.27$; $p < 0.001$) and less trustworthy ($F(1, 201) = 5.59$; $p = 0.001$) when outside sources of information are less supportive of managers' optimistic claims about the future. Our results are inferentially identical when we control for participants' assessments of management credibility.

information ask about (1) strengths and weaknesses of Jackson's identified in the Analyst Report, (2) changes in analyst coverage over the previous month, as shown in the Analyst Consensus, and (3) whether the News Story expressed that sporting goods retailers are good candidates for online selling. Finally, participants respond to demographic questions.

For the comprehension checks related to the *initial press release*, readability does not affect the proportion of the three questions that participants answered correctly (t(201)=0.56; p=0.435, two-tailed). This result is consistent with the results of Rennekamp [2012] and suggests that our results are not driven by actual differences in acquisition of information from the initial press release. While the initial disclosure may be less readable in the less readable condition, it is not *unreadable*, allowing participants to extract the information presented in the disclosure despite any differences in feelings of processing fluency or investor comfort. The proportion of correct responses, by condition, ranged from 69.13% to 75.16%, or roughly 2 out of 3 comprehension check questions answered correctly in each condition.[11] We discuss responses to the comprehension checks related to the *outside* information in Section 4.

American Accounting Association
preprint
accepted manuscript

Primary Dependent Variables

To test H1, we use participants' final valuation judgments as our dependent measure with their initial valuation judgments as a covariate. Because the initial (final) valuation judgments are made before (after) participants view both the disclosure provided by the firm and any outside sources of information they choose to access, this measure captures participants' reactions to the information they view and their beliefs about how that information should be used.

[11] Inferences are unchanged if we exclude participants who appeared to be very inattentive and missed all three comprehension checks related to the initial press release. Further, inferences are unchanged if we control for the number of correct responses to the comprehension checks in our hypotheses tests, and the number of correct responses is not significant as a covariate in our analyses.

We test H2 and H3 using our measure of investor comfort (described previously) and four proxies for the intensity and effectiveness of participants' search of outside information. To capture the intensity and effectiveness of participants' information search, we measure (1) whether participants access at least one outside source of information, (2) the number of outside sources of information participants access (out of the three that were available), (3) the total amount of time participants spend evaluating the outside sources of information, and (4) the number of correct responses to the comprehension check questions about the outside information.[12] Finally, we test H4 by examining whether, controlling for participants' information search (i.e., variables used to test H3), investors' sensitivity to outside information is decreasing in their level of comfort evaluating the firm. In other words, when investors view a less readable initial disclosure, and are less comfortable evaluating the firm, we expect them to be more sensitive to the content of outside information because they rely on it to a greater extent (controlling for their actual information search).

American Accounting Association
preprint
accepted manuscript

IV. RESULTS

In this section we first present manipulation and comprehension checks, followed by results testing H1 through H4 using our full sample of participants. In additional analyses, we then separately consider the judgments of investors depending on whether or not they accessed any of the outside sources of information. Except as otherwise noted, all p-values reported in the text are one-tailed.

Manipulation Checks and Comprehension Questions

Two measures of readability that have been widely used in the prior accounting literature are the Fog Index and the Flesch Reading Ease Score (see, e.g., Li 2008; Biddle, Hilary, and

[12] These measures are unobtrusive process measures that capture participants' actual behavior (see, e.g., Libby, Rennekamp, and Seybert 2015 for a discussion of the benefits to this approach).

Verdi 2009; Lehavy, Li, and Merkley 2011). Consistent with an effective manipulation of disclosure readability, we find that both of these measures indicate that readability is lower for the less readable disclosure.[13] In addition, we find that participants who view the less readable initial disclosure spend an average of 22.73 more seconds viewing the disclosure than those who view a more readable disclosure ($F(1, 201) = 3.71$; $p = 0.055$, two-tailed), with participants in the less (more) readable condition spending an average of 123.15 (100.42) seconds viewing the disclosure. This represents a 22.6% increase in time spent reading the disclosure and provides additional support that our manipulation was successful in making the disclosure less readable and more difficult to process.[14] We used an out-of-sample manipulation check to ensure that the More Supportive condition contains more favorable information about Jackson's than our Less Supportive condition.[15]

We find that 128 of the participants in our study accessed one or more sources of outside information, with 61 participants accessing the individual analyst's report, 83 participants accessing the report summarizing the analyst consensus, and 76 participants accessing the news story. To distinguish between participants who gave the outside information a cursory glance and participants who read the outside information carefully, participants answer one comprehension

American Accounting Association
preprint
accepted manuscript

[13] A lower (higher) Fog Index (Flesch Reading Ease Score) indicates higher readability. For the more (less) readable disclosure, the FOG index is 10.67 (12.24), and the Flesch Reading Ease Score is 23.8 (15.4).

[14] Overall, participants spent an average of 8 minutes and 28 seconds on the study, with those in the more readable condition spending less time than those in the less readable condition (8:03 vs. 8:54). In addition, time spent on the study is increasing in the number of sources accessed (7:47 for those who accessed no outside sources, compared to 8:18, 8:30, and 10:29, for those who accessed 1, 2, or 3 outside sources, respectively).

[15] We recruited 102 participants from Amazon Mechanical Turk. Each participant viewed the More and Less Supportive stimuli for each source of outside information and rated which stimulus contained "more favorable information for Jackson's Sports Stores" on a 7-point scale. We randomized (1) the order in which participants viewed the sources of outside information, (2) whether the More or Less Supportive stimulus appeared on the right or left, and (3) whether a higher or lower rating indicated that the More or Less Supportive stimulus contained more favorable information. We then coded responses so that higher ratings indicate that the More Supportive stimuli contained more favorable information. Average ratings were 4.54, 5.31, and 5.34 for the news story, analyst report, and summary of the analyst consensus, respectively. Each of these is significantly greater than the midpoint (all $t(101) \geq 6.76$; all $p < 0.001$, two-tailed), indicating that participants, on average, viewed the More Supportive condition as containing more favorable information than the Less Supportive condition.

check question relating to each source of outside information they accessed (i.e., participants only answered questions related to the sources of outside information they accessed). Each comprehension check question had three possible responses. On average, participants who accessed at least one source of outside information answered 1.72 comprehension check questions, and the average number of correct responses was 1.04 (60.47%), which is significantly greater than chance ($t(128) = 5.80$; $p < 0.001$, two-tailed).[16] These results indicate that, consistent with our design goals, there is variation in participants' propensity to access the outside information, read the outside information carefully, pay close attention to the details in that outside information, and encode the content of that outside information in memory.

American Accounting Association

Test of Hypothesis 1

H1 predicts that participants' valuation judgments will be more sensitive to outside information after viewing a less readable firm disclosure. We initially test our hypotheses using our full sample, as opposed to only those who accessed at least one source of outside information, for two reasons. First, it is possible that disclosure readability could increase the *number* of participants who access outside information (as predicted by H3) without affecting the extent to which individual participants rely on the outside information they access. Second, to the extent that less readable disclosures increase individual participants' reliance on the outside information they access (as predicted by H4), basing our analyses on the full sample of participants avoids potential self-selection concerns and biases against finding support for our

preprint accepted manuscript

[16] Specifically, of the participants who accessed each source of outside information, 69.4% of participants correctly answered the comprehension check question related to the individual analyst's report; 48.8% of participants correctly answered the comprehension check question related to the report summarizing the analyst consensus; 69.3% of participants correctly answered the comprehension check question related to the news story. For each source of outside information, this is significantly greater than chance ($t(58) = 5.98$, $t(82) = 2.78$, and $t(74) = 6.72$, respectively; all $p \leq 0.007$, two-tailed).

hypotheses. Importantly, we also discuss additional analyses in which we focus on participants who accessed at least one source of outside information.

Panel A of Table 1 presents descriptive statistics for participants' initial valuation judgments and final valuation judgments, as well as least square means and standard errors for their final valuation judgments adjusted for initial valuation judgments as a covariate. If participants' valuation judgments are more sensitive to the content of outside information after reading a less readable disclosure, we would expect the outside information manipulation to have a larger effect when participants' initially read a less readable firm disclosure (i.e., a Readability x Outside Information interaction). Panel A of Figure 2 presents final valuation judgments graphically. As indicated in Panel B of Table 1, we find that participants' valuation judgments are lower when outside sources of information are less supportive of management's positive assertions about the future ($p = 0.022$), indicating that participants viewed the more supportive condition as being more positive or less negative than the less supportive condition. In addition, this effect is qualified by a marginally significant interaction ($p = 0.057$), indicating that participants are indeed more sensitive to the content of the outside information sources when they initially view a less readable disclosure.[17] Further, as indicated in Panel C, we find that the content of the outside sources of information affects participants' valuation judgments when they initially view a less readable disclosure ($p = 0.006$), but not when they initially view a more readable disclosure ($p = 0.759$, two-tailed). These results provide support for H1. To better understand why participants' valuation judgments are more sensitive to the content of outside information, we next examine the extent to which information search and reliance on outside information contribute to this effect.

American Accounting Association
preprint
accepted
manuscript

[17] This result is robust to using the difference between participants' final and initial valuation judgments as our dependent measure ($p=0.045$), or to using the percentage change in valuation judgments as our dependent measure ($p=0.049$). All other inferences are also unchanged if we use either of these alternatives as our dependent measure.

[INSERT TABLE 1]

Tests of Hypotheses 2, 3, and 4

H2 predicts that investors will feel less comfortable evaluating a firm after viewing a less readable initial firm disclosure. Panel A of Table 2 presents descriptive statistics for our measures of participants' reliance on the initial firm disclosure and confidence in their ability to evaluate the firm as an investment, as well as a factor score from a principal component analysis for these two measures, which serves as our measure of *Investor Comfort*.[18] Consistent with H2, the results of an analysis of variance (ANOVA) presented in Panel B indicate that participants who initially view a less readable disclosure feel less comfortable evaluating the firm ($p < 0.001$).[19]

American Accounting Association

[INSERT TABLE 2]

H3 predicts that participants will exhibit greater sensitivity to the outside information after viewing a less readable disclosure because they are more likely to search the outside information. As depicted in Figure 3, we find that as *Investor Comfort* decreases, participants are marginally more likely to access at least one source of outside information ($p = 0.077$) and access a greater number of outside information sources ($p < 0.003$). Similarly, as *Investor Comfort* decreases, participants spend a greater amount of time analyzing outside information sources ($p = 0.028$) and correctly answer a greater number of comprehension check questions related to the outside information (our measure of encoding) ($p = 0.038$). For each of these four dependent variables, we use also use structural equation modeling and find that disclosure

preprint accepted manuscript

[18] This factor accounts for the majority of variance in the measures (eigenvalue = 1.503, variance explained = 75.2%).

[19] Importantly, while H3 predicts that investor comfort will affect participants' information search, our experimental design ensures that the reverse is not true – participants had not yet viewed the outside information, so the content of that information could not have influenced *Investor Comfort*. As expected, we find no evidence that the outside information affected *Investor Comfort* as a main effect or in interaction with our manipulation of readability.

readability indirectly affects information search through *Investor Comfort* (all $z < -1.320$; $p = 0.094$, $p = 0.013$, $p = 0.044$, and $p = 0.055$, respectively (not tabulated)). Further, for all four measures of information search, we find no evidence that the effect of *Investor Comfort* is moderated by disclosure readability (all $|t|(203) \leq 0.81$; all $p \geq 0.421$, two-tailed, not tabulated), suggesting that investor comfort is an important driver of information search independent of the readability of firm disclosures.

[INSERT FIGURE 3]

Although we observe evidence of an indirect effect, across all four measures we find no evidence that participants who initially view a less readable disclosure engage in greater information search than those who view a more readable disclosure (i.e., no main effect of disclosure readability on our four measures of information search) (all $F(1, 201) \leq 0.44$; all $p \geq 0.253$, not tabulated). Likewise, as indicated in Table 3, we find no evidence that disclosure readability affects participants' propensity to access any of the individual sources of outside information (all $p \geq 0.174$). Taken together, these results provide limited support for H3, indicating that readability indirectly affects participants' information search through its effect on *Investor Comfort*, but this effect cannot fully account for the increased sensitivity to outside information in participants' valuation judgments resulting from lower disclosure readability (for a discussion of indirect effects see, e.g., Shrout and Bolger 2002; Zhao, Lynch, and Chen 2010; Hayes 2013).

[INSERT TABLE 3]

H4 predicts that participants' valuation judgments will be more sensitive to the content of outside information when they initially view a less readable disclosure because they rely on that outside information to a greater extent (holding constant the extent to which participants access,

American Accounting Association
preprint
accepted
manuscript

analyze, and encode the content of that outside information). To test this hypothesis, we examine whether the effect of outside information is decreasing in *Investor Comfort* by examining the interaction between the content of the outside information and *Investor Comfort* while controlling for the number of sources accessed, the amount of time spent on outside information, the number of correct responses to the comprehension check questions about the outside information and the interaction between each of these measures with the content of the outside information.

As indicated in Table 4, the effect of outside information is increasing in the number of correct responses to the comprehension check questions about the outside information (i.e., the extent to which participants' encode the outside information), as indicated by the positive coefficient on the interaction between the content of the outside information and the number of correct responses ($p = 0.014$). It is important to note that neither the number of the sources accessed nor the amount of time spent analyzing outside sources significantly interact with the content of outside information ($p = 0.401$, two-tailed and $p = 0.577$, two-tailed, respectively). This suggests that the extent to which participants' valuation judgments are sensitive to the content of outside information is influenced by whether they actually encode the content rather than whether they simply access and analyze that outside information.

Finally, the effect of outside information is decreasing in *Investor Comfort*, as indicated by the marginally negative coefficient on the interaction between the content of the outside information and *Investor Comfort* ($p = 0.087$). This result provides support for H4 and indicates that participants' level of comfort affects the extent to which participants incorporate outside information into their valuation judgments beyond the effects of acquiring the content of that

American Accounting Association
preprint
accepted
manuscript

outside information. After controlling for these effects, the interaction between disclosure readability and the outside information is no longer significant (p = 0.230, two-tailed).

[INSERT TABLE 4]

Additional Analyses

In this section, we provide additional analyses suggesting that less readable disclosures increase participants' sensitivity to both positive and negative cues contained in outside information. Panel A of Table 5 separately presents descriptive statistics for participants' adjusted final valuation judgments depending on whether they access at least one outside information source. Panel B of Figure 2 presents these judgments graphically. Seventy-five out of 203 participants (36.9%) did not access any of the outside sources of information. Because readability cannot affect participants' reliance on outside information that is not accessed, we would not expect disclosure readability to influence the extent to which these participants are sensitive to the content of that outside information. As indicated in Panel B of Table 5, for participants who do not access any of the outside sources of information, the content of the outside information sources does not affect valuation judgments (p = 0.457, two-tailed) and does not interact with the readability of the initial disclosure (p = 0.909, two-tailed). However, these participants do provide lower valuation judgments when they initially view a less readable press release (p = 0.026).[20] Given that the mixed performance information in the earnings announcement is accompanied by relatively positive forward-looking information in our setting, this finding suggests that low disclosure readability might reduce the effectiveness of positive

American Accounting Association
preprint
accepted
manuscript

[20] This finding is different from, but not inconsistent with, the results demonstrated in Rennekamp (2012). In her study, a less readable disclosure *of poor performance* led to higher valuation judgments because it limited reliance on negative information. In our study with a disclosure that contains news that is mixed (as opposed to purely negative), a less readable disclosure may lead to more negative valuation judgments because it decreases the extent to which investors believe managers' positive assertions about future performance.

causal narratives that describe why performance is likely to improve in the future (Sedor 2002; Kadous, Krische, and Sedor 2006).

[INSERT TABLE 5]

For participants who access at least one outside information source (see Panel C of Table 5), valuation judgments are lower when the outside information sources are less supportive of management's positive claims about the future (p = 0.008), suggesting that participants viewed the more supportive condition as being more positive or less negative than the less supportive condition. In addition, participants' valuation judgments are more sensitive to the content of those outside information sources when they initially view a less readable disclosure, as evidenced by the Readability x Outside Information interaction (p = 0.040). In results not tabulated, we again find that the content of the outside sources of information affects participants' valuation judgments when they initially view a less readable disclosure (F(1, 123) = 8.82; p = 0.004), but not when they initially view a more readable disclosure (F(1, 123) = 0.25; p = 0.310).[21]

We also find that when the outside information is less supportive, the change in valuation judgments for participants in the Less Readable condition ($\mu_{final} - \mu_{initial}$ = 6.00 – 6.09 = −0.09) is marginally lower than the change in valuation judgments for participants in the More Readable condition ($\mu_{final} - \mu_{initial}$ = 6.53 – 6.14 = 0.39) (Difference = 0.39 − (−0.09) = 0.48; F(1, 124) = 1.69; p = 0.098). In contrast, when outside information is more supportive, the change in valuation judgments for participants in the Less Readable condition ($\mu_{final} - \mu_{initial}$ = 7.00 – 5.97 = 1.03) is directionally higher than the change in valuation judgments for

[21] If we restrict our analyses to those participants who accessed the analyst report and/or the analyst consensus report (the two sources of outside information that contained stronger cues) our results are stronger. Specifically, the Readability x Outside Information interaction is significant (F(1, 96) = 6.68; p = 0.006) and the outside information manipulation affects valuation judgments for participants in the Less Readable condition (F(1, 96) = 18.62; p < 0.001) but not for participants in the More Readable condition (F(1, 96) = 0.25; p = 0.309).

American Accounting Association preprint accepted manuscript

participants in the More Readable condition ($\mu_{final} - \mu_{initial}$ = 6.67 – 6.08 = 0.59) (Difference = 1.03 – 0.59 = 0.44; $F(1, 124) = 1.55$; p = 0.108).[22]

As indicated in Table 6, we again find that the effect of outside information is increasing in the number of correct responses to the comprehension check questions about the outside information, as indicated by the positive coefficient on the interaction between the content of the outside information and the number of correct responses to the comprehension check questions (p = 0.029). Similarly, the effect of outside information is decreasing in *Investor Comfort*, as indicated by the negative coefficient on the interaction between the content of the outside information and *Investor Comfort* (p = 0.029). Again, after controlling for these effects, the interaction between disclosure readability and the outside information is no longer significant (p = 0.272, two-tailed). Taken together, these analyses provide additional support for H4, as disclosure readability affects investors' sensitivity to the news in the outside information sources for participants who access at least one of these outside information sources.

American Accounting Association
preprint
accepted manuscript

[INSERT TABLE 6]

V. CONCLUSION

In this study we examine how less readable firm disclosures affect the sensitivity of investors' valuation judgments to outside sources of information. Using a controlled experiment, we find that when a firm provides a less readable disclosure, participants feel less comfortable evaluating the firm and their judgments about the firm are more sensitive to the content of

[22] These results are stronger if we again restrict our analyses to participants who accessed the analyst report and/or the analyst consensus report. When the outside information is less supportive, the change in valuation judgments for participants in the Less Readable condition ($\mu_{final} - \mu_{initial}$ = 5.92 – 6.15 = -0.23) is lower than the change in valuation judgments for participants in the More Readable condition ($\mu_{final} - \mu_{initial}$ = 6.81 – 6.19 = 0.62) (Difference = 0.62 – (-0.23) = 0.85; $F(1, 96) = 5.06$; p = 0.013). In contrast, when outside information is more supportive, the change in valuation judgments for participants in the Less Readable condition ($\mu_{final} - \mu_{initial}$ = 7.30 – 6.00 = 1.30) is marginally higher than the change in valuation judgments for participants in the More Readable condition ($\mu_{final} - \mu_{initial}$ = 6.88 – 6.08 = 0.80) (Difference = 1.30 – 0.80 = 0.50; $F(1, 96) = 1.91$; p = 0.085).

outside sources of information about the firm. In addition, we examine whether any increased sensitivity to the content of outside information is driven by (1) greater information search of outside information and/or (2) greater reliance on the outside information (holding information search constant). We find that the greater sensitivity to outside information following a less readable initial disclosure is driven primarily by participants relying on the outside information to a greater extent when evaluating the firm. Finally, when participants do not access any of the outside sources of information, we find that valuation judgments are lower overall when a firm provides a less readable disclosure.

Taken together, our results suggest that providing less readable disclosures may limit managers' ability to effectively communicate their private information to investors. In addition, if managers strategically issue less readable disclosures to obfuscate poor performance, our results suggest that investors will respond by increasing their reliance on outside information, at least partially negating this strategic obfuscation. Finally, our results suggest an unintended consequence of the SEC's recommendation to increase disclosure readability. Specifically, our results indicate that increasing disclosure readability reduces investors' propensity to rely on outside information, suggesting that investors might over-rely on more readable firm disclosures.

Our study is subject to limitations that provide opportunities for future research. First, we give participants access to only a limited set of outside sources of information in order to keep the task manageable. In the real world, investors have access to many other sources of information. Second, some participants may have accessed outside information due to experimental demand (e.g., they want to be "good participants"), potentially increasing noise in our measures of information search and reducing our ability to detect a relation between disclosure readability and information search. Future work might mitigate these effects by using

American Accounting Association
preprint
accepted
manuscript

more complex experimental designs, by using more complex incentive schemes, or by recruiting participants who are unlikely to be intrinsically motivated to perform well on the task.

Third, all participants in our study viewed the firm disclosure before the outside information. In practice, investors can choose when (or whether) to access firm disclosures. While we do not directly test the potential effect of this design choice, we believe that our results could have implications even if outside information is accessed before firm disclosures, as the readability of firm disclosures could still affect investors' relative reliance on firm disclosures vs. outside information. However, our paper does not speak to the behavior of investors that first seek out outside information sources and *never* look to firm-sources of information. Future work might examine the determinants and consequences of different search strategies.

Finally, future research might examine how disclosure readability affects information search and reliance on outside information for disclosures that contain positive historical and forward-looking information. While managers are unlikely to intentionally obfuscate disclosures of good performance by making them less readable, it is still possible that they do not exert any extra effort to improve readability – a decision that may prove costly.

Although not our primary focus, our study complements prior literature on information search. Prior research finds that tax professionals (e.g., Cloyd and Spilker 1999; Kadous, Magro, and Spilker 2008), auditors (e.g., Turner 2001; Wilks 2002; Kadous, Kennedy, and Peecher 2003), and current investors (e.g., Thayer 2011) may seek out and/or interpret new information in a way that supports their desired conclusions, often unintentionally. Future research could investigate whether firms' initial disclosure readability affects users differently depending on whether they are current vs. prospective investors. For example, it is possible that current

American Accounting Association
preprint
accepted
manuscript

investors would engage in more biased search for outside information and/or rely on outside information in a biased way in order to reach more positive conclusions about the firm.

Our study also contributes to the recent accounting literature on disclosure readability and linguistic choices. While existing studies largely focus on investors' reactions to the readability of a given disclosure, our study extends this literature to examine how disclosure readability affects investors' propensity to search for, and rely on, outside information to inform their evaluation of a firm. Our study also complements prior work that examines whether managers intentionally obfuscate poor performance by making disclosures less readable (e.g., Courtis 1986, 1998; Jones 1988; Subramanian, Insley, and Blackwell 1993; Clatworthy and Jones 2001; Li 2008; Asay, Libby, and Rennekamp 2016). While we do not address whether managers engage in strategic obfuscation, we do provide evidence that any benefits to this strategy are likely to be limited by some corresponding negative effects. Further, if investors' behavior is somewhat sticky, then providing a less readable disclosure may not only increase the likelihood that investors shift their attention to outside information in the current period, but also in future periods, suggesting further deterioration in managers' ability to effectively communicate their private information to investors.

American Accounting Association
preprint
accepted
manuscript

Appendix A. Initial Disclosures Provided by the Firm

Panel A. More Readable Condition

Jackson's Sports Store, Inc. Reports Second Quarter Results

NEW ORLEANS, Aug. 20, 2013 /PRNewswire/ -- Jackson's Sports Store, Inc. (NYSE: JCK), today reported sales and earnings results for the second quarter ended August 3, 2013.

Second Quarter Results:

	Q2 2013	Q2 2012	Change
Net Sales	$1.15 billion	$1.08 billion	+6.6%
Net Income	$62.4 million	$59.0 million	+5.8%

	Q2 2013	Q2 Original Guidance	Guidance vs. Actual	Q2 2012
EPS	$0.81	$0.83 to $0.85	($0.04) to ($0.02) shortfall	$0.77

American Accounting Association

Jay W. Emery, Chairman and CEO stated that "Our second quarter results were below our original expectations. A sluggish consumer environment along with higher levels of precipitation and cooler temperatures contributed to a decrease in traffic, resulting in lower than expected same store sales. Despite these challenges in the second quarter, we were able to generate record earnings per share."

preprint

Mr. Emery continued, "In order to drive traffic and respond to the consumer environment we are

- increasing our advertising levels;
- enhancing our online offerings;
- and investing in high-margin categories like home-gym equipment."

accepted manuscript

Mr. Emery concluded, "The current challenges we are facing are short-term in nature and we are actively pursuing strategies to address them. This does not change our view of the profitable long-term growth opportunities for our business."

Current Outlook

- Based on an estimated 77 million shares outstanding, the Company currently anticipates reporting consolidated earnings per share of approximately $2.60 to 2.65 for the year ending February 1, 2014. For the year ended February 2, 2013, the Company reported earnings per share of $2.53.
- The Company expects to complete four full and seventy-five partial remodels of Jackson's Sports stores in 2013.
- The Company expects future sales to be fueled by steadily increasing consumer demand, particularly in high-margin home gym equipment and online sales, as the economy continues to strengthen.

Appendix A, continued.

Panel B. Less Readable Condition

Jackson's Sports Store, Inc. Reports Second Quarter Results

NEW ORLEANS, Aug. 20, 2013 /PRNewswire/ -- Jackson's Sports Store, Inc. (NYSE: JCK), today reported sales and earnings results for the second quarter ended August 3, 2013.

The Company reported net income for the second quarter ended August 3, 2013 of $62.4 million, or $0.81 per share, compared to the Company's original guidance provided on May 21, 2013 of $0.83 to 0.85 per share. For the second quarter ended July 28, 2012, the Company reported net income of $59.0 million, or $0.77 per share. Net sales for the second quarter of 2013 increased 6.6%, to $1.15 billion from $1.08 billion.

"The Company's second quarter results were below the original outlook because a sluggish consumer environment along with higher levels of precipitation and cooler temperatures contributed to decreased traffic, resulting in lower than expected same store sales," said Jay W. Emery, Chairman and CEO. "Despite these challenges in the second quarter, Jackson's was able to generate record earnings per share."

"In order to drive traffic and respond to the consumer environment the Company is increasing advertising levels, enhancing online offerings and investing in high-margin categories like home-gym equipment," continued Mr. Emery.

Mr. Emery concluded with, "The current trials the Company is facing are short-term in nature and Jackson's is dynamically pursuing strategies to address them. This does not change the Company's view of the profitable long-term growth opportunities for its business."

For its current outlook, and based on an estimated 77 million shares outstanding, the Company currently anticipates reporting consolidated earnings per share of approximately $2.60 to $2.65 for the year ending February 1, 2014. For the year ended February 2, 2013, the Company reported earnings per share of $2.53. The Company expects to complete 4 full and 75 partial remodels of Jackson's Sports stores in 2013. The Company expects future sales to be fueled by steadily increasing consumer demand, particularly in high-margin home gym equipment and online sales, as the economy continues to strengthen.

American Accounting Association
preprint
accepted manuscript

The above shows both the more and less readable versions of the initial firm disclosure in our experiment. Participants were randomly assigned to view one or the other before choosing whether to seek out outside information.

Appendix B. Analyst Report (Less Supportive Condition Example)

Jackson's Sports Stores, Inc. Prepared by GlobalMeta

Jackson's Sports Stores, Inc. – Financial and Strategic Analysis Review

Company Snapshot:

Jackson's Sports Stores, Inc., Key Information	
Web Address	www.jacksonssportsstores.com
Financial year-end	February
Number of employees	9,800
NYSE	JCK

Key Data:

Jackson's Sports Stores, Inc., Key Data	
P/E	20.04
Dividend Yield	0.05
Share Price (USD) as on 28-Aug-2013	56.24
Target Share Price	54.00
Recommendation	**Hold**
Market Cap (million USD)	4,330

Company Overview:

Jackson's Sports Stores, Inc. (Jackson's) is a specialty retailer engaged in selling sporting goods equipment, apparel and footwear. The company's product portfolio includes athletic apparel, outerwear, sportswear, athletic shoes, casual footwear, boots, socks and related accessories, fitness equipment, golf products, bicycles, scooters, skateboards and other sports related merchandise.

It offers well known brands such as Nike, North Face, Columbia, adidas, TaylorMade, Callaway and Under Armour. In addition, it also provides popular and profitable private labels.

SWOT Analysis:

Jackson's Sports Stores, Inc., SWOT Analysis	
Strengths	Weaknesses
Diversified Product Portfolio	Deterioration in Liquidity Position Seasonal Nature of the Business Product Recall Incident
Opportunities	Threats
Strategic Business Initiatives	Declines in Fitness Industry Growing Counterfeit Goods Market Highly Competitive Environment

The above shows an example of the Analyst Report that was made available to our participants as one of three possible sources of outside (external to the firm). The example shown above is for the condition where the outside information is less supportive of management's assertions in the initial disclosure (see Appendix A) that future performance is likely to improve.

Appendix C. Analyst Consensus Report (Less Supportive Condition Example)

Analyst Consensus Forecasts – August 21, 2013

The information below pertains to the consensus estimates of the 24 Analysts that currently follow Jackson's Sports Stores, Inc.

Recommendation Summary*	
Mean Recommendation (this week):	3.81
Mean Recommendation (last week):	3.99
Change:	0.18

*(1.0 = Sell, 5.0 = Strong Buy)

Price Target Summary	
Mean Target:	55.44
Median Target:	56.00
High Target:	63.00
Low Target:	44.00

Recommendation Trends				
	Current Month	Last Month	6 Months Ago	12 Months Ago
Strong Buy	7	11	12	12
Buy	8	11	11	10
Hold	8	8	7	8
Underperform	1	0	0	0
Sell	0	0	0	0
Total covering:	**24**	**30**	**30**	**30**

The above shows an example of the Analyst Consensus Report that was made available to our participants as one of three possible sources of outside information (external to the firm). The example shown above is for the condition where the outside information is less supportive of management's assertions in the initial disclosure (see Appendix A) that future performance is likely to improve.

Appendix D. Yahoo! Finance News Story (Less Supportive Condition Example)

Yahoo! Finance

"Should you invest in a Sporting Goods Company?"

Analysts have had mixed opinions on sporting goods stores of late. On July 4, analysts at Deutsche Bank reiterated a "buy" rating on **Dick's Sporting Goods** (NYSE: DKS). However, over the past three months, analysts covering other players in the industry have lowered their EPS estimates, both for this year and 2014.

Which competitors are the better buy?

While E-Commerce has taken off in most industries, the sporting goods industry is unique. Bruce Hambon, director of marketing and communications for the National Sporting Goods Federation, a trade group, says that more than four-fifths of athletic equipment and shoes were bought at walk-in stores in 2012. Because of this, investors should be focused on companies that are placing their emphasis on expanding retail stores rather than on expanding their online presence.

A potentially big new revenue stream comes in the form of new niche stores, specifically those that cater to hunters, fishers, and other outdoorsmen.

Final thoughts

Many of the players in the industry have seen their shares experience a massive run up in the past year. Analysts have a median price target below where the stocks currently trade and their biggest shareholder has been selling.

The above shows an example of the Yahoo! Finance news story that was made available to our participants as one of three possible sources of outside information (external to the firm). The example shown above is for the condition where the outside information is less supportive of management's assertions in the initial disclosure (see Appendix A) that future performance is likely to improve.

REFERENCES

Alter, A. L., and D. M. Oppenheimer. 2009. Uniting the tribes of fluency to form a metacognitive nation. *Personality and Social Psychology Review* 13 (3): 219-235.

Alter, A. L., D. M. Oppenheimer, N. Epley, and R. N. Eyre. 2007. Overcoming intuition: metacognitive difficulty activates analytic reasoning. *Journal of Experimental Psychology: General* 136 (4): 569.

Asay, H. S., R. Libby, and K. M. Rennekamp. 2016. The influence of performance and reporting goals on natural language choices in disclosures. Working paper.

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

Biddle, G. C., G. Hilary, and R. S. Verdi. 2009. How does financial reporting quality relate to investment efficiency? *Journal of Accounting and Economics* 48 (2-3): 112-131.

Birnberg, J. G., and M. D. Shields. 1984. The role of attention and memory in accounting decisions. *Accounting, Organizations and Society* 9 (3): 365-382.

Bloomfield, R. J. 2002. The "incomplete revelation hypothesis" and financial reporting. *Accounting Horizons* 16 (3): 233-243.

Brennan, N., and D. Merkl-Davies. 2013. Accounting narratives and impression management. In *The Routledge Companion to Accounting Communication*, edited by L. Jack, J. Davison, and R. Craig.: Routledge.

Clatworthy, M., and M. J. Jones. 2001. The effect of thematic structure on the variability of annual report readability. *Accounting, Auditing & Accountability Journal* 14 (3): 311-326.

Cloyd, C. B., and B. C. Spilker. 1999. The influence of client preferences on tax professionals' search for judicial precedents, subsequent judgments and recommendations. *The Accounting Review* 74 (3): 299-322.

Courtis, J. K. 1986. An investigation into annual report readability and corporate risk-return relationships. *Accounting and Business Research* 16 (64): 285-294.

Courtis, J. K. 1998. "Annual report readability variability: tests of the obfuscation hypothesis." *Accounting, Auditing & Accountability Journal* 11 (4): 459-472.

Drake, M., D. Roulstone, and J. Thornock. 2012. "Investor information demand: evidence from Google searches around earnings announcements". *Journal of Accounting Research* 50 (4): 1001-1040.

American Accounting Association preprint accepted manuscript

Dworkis, K. K. 2013. *The interactive effects of incentive threshold and narcissism on managerial decision-making*. Doctoral dissertation, University of Southern California.

Elliott, W. B. 2006. Are investors influenced by pro forma emphasis and reconciliations in earnings announcements? *The Accounting Review* 81 (1): 113-133.

Elliott, W. B., F. D. Hodge, J. J. Kennedy, and M. Pronk. 2007. Are M.B.A. students a good proxy for nonprofessional investors? *The Accounting Review* 82 (1): 139-168.

Elliott, W. B., K. M. Rennekamp, and B. J. White. 2015. Does concrete language in disclosures increase willingness to invest? *Review of Accounting Studies* 20 (2): 839-865.

Farrell, A. M., J. H. Grenier, and J. Leiby. 2016. "Scoundrels or stars? Theory and evidence on the quality of workers in online markets." *The Accounting Review* (forthcoming).

Grossman, S. J., and J. E. Stiglitz. 1980. On the impossibility of informationally efficient markets. *The American Economic Review* 70 (3): 393-408.

Hayes, A.F. 2013. *Introduction to mediation, moderation and conditional process analysis*. New York: The Guilford Press.

Hirshleifer, D., and S. H. Teoh. 2003. Limited attention, information disclosure, and financial reporting. *Journal of Accounting and Economics* 36 (1): 337-386.

Hodge, F. D., J. J. Kennedy, and L. A. Maines. 2004. Does search-facilitating technology improve the transparency of financial reporting? *The Accounting Review* 79 (3): 687-703.

Jones, M. J. 1988. A longitudinal study of the readability of the chairman's narratives in the corporate reports of a UK company. *Accounting and Business Research* 18 (72): 297-305.

Kadous, K., J. Kennedy, and M. Peecher. 2003. The effect of quality assessment and directional goal commitment on auditors' acceptance of client-preferred accounting methods. *The Accounting Review* 78 (3): 759-778.

Kadous, K., S. D. Krische, and L. M. Sedor. 2006. Using counter-explanation to limit analysts' forecast optimism. *The Accounting Review* 81 (2): 377-397.

Kadous, K., A. M. Magro, and B. C. Spilker. 2008. Do effects of client preference on accounting professionals' information search and subsequent judgments persist with high practice risk? *The Accounting Review* 83 (1): 133-156.

Koonce, L., J. Miller and J. Winchel. 2015. The effects of norms on investor reactions to derivative use. *Contemporary Accounting Research* 32 (4): 1529-1554.

Krische, S. D. 2014. "Who is the average individual investor? Numerical skills and implications for accounting research." Working paper.

American Accounting Association
Online accepted manuscript

Lawrence, A. 2013. Individual investors and financial disclosure. *Journal of Accounting and Economics* 56 (1): 130-147.

Lehavy, R., F. Li, and K. Merkley. 2011. The effect of annual report readability on analyst following and the properties of their earnings forecasts. *The Accounting Review* 86 (3): 1087-1115.

Li, F. 2008. Annual report readability, current earnings, and earnings persistence." *Journal of Accounting and Economics* 45 (2-3): 221-247.

Li, F. 2010. Textual analysis of corporate disclosures: a survey of the literature. *Journal of Accounting Literature* 29: 143-165.

Libby, R., R. Bloomfield, and M. Nelson. 2002. Experimental research in financial accounting." *Accounting, Organizations and Society* 27 (8): 775-810.

Libby, R., and S. Emett. 2014. Earnings presentation effects on manager reporting choices and investor decisions." *Accounting and Business Research* 44 (4): 410-438.

Libby, R., K. Rennekamp, and N. Seybert. 2015. Regulation and the interdependent roles of managers, auditors, and directors in earnings management and accounting choice." *Accounting Organizations and Society* 47: 25-42.

Loibl, C., and T. Hira. 2009. Investor information search. *Journal of Economic Psychology* 30 (1): 24-41.

Maines, L. A., and L. S. McDaniel. 2000. Effects of comprehensive-income characteristics on nonprofessional investors' judgments: the role of financial-statement presentation format. *The Accounting Review* 75 (2): 179-207.

Miller, B. 2010. The effects of reporting complexity on small and large investor trading. *The Accounting Review* 85 (6): 2107-2143.

Nickerson, R. S. 1998. Confirmation bias: a ubiquitous phenomenon in many guises. *Review of General Psychology* 2 (2): 175-220.

Novemsky, N., R. Dhar, N. Schwarz, and I. Simonson. 2007. Preference fluency in choice. *Journal of Marketing Research* 44 (3): 347-356.

Pyszczynski, T., and J. Greenberg. 1987. Toward an integration of cognitive and motivational perspectives on social inference: a biased hypothesis-testing model. In *Advances in Experimental Social Psychology: Volume 20*. San Diego, California: Academic Press.

Rennekamp, K.. 2012. Processing fluency and investors' reactions to disclosure readability. *Journal of Accounting Research* 50 (5): 1319-1354.

American Accounting Association
preprint
accepted
manuscript

Rennekamp, K., K. Rupar, and N. Seybert. 2015. Impaired judgment: the effects of asset impairment reversibility and cognitive dissonance on future investment. *The Accounting Review* 90 (2): 739-759.

Russo, J. E., and K. Carlson. 2002. Individual decision-making. In *Handbook of Marketing*, edited by B. Weitz, and R. Wensley. Thousand Oaks, California: Sage Publishing.

Rutherford, B. 2003. Obfuscation, textual complexity and the role of regulated narrative accounting disclosure in corporate governance. *Journal of Management and Governance* 7 (1): 187-210.

Securities and Exchange Commission (SEC). 1998. *A Plain English Handbook: How to Create Clear SEC Disclosure*. SEC Office of Investor Education and Assistance. Available at: http://www.sec.gov/pdf/handbook.pdf.

Sedor, L. 2002. An explanation for unintentional optimism in analysts' earnings forecasts. *The Accounting Review* 77 (4): 731-753.

Shrout, P., and N. Bolger. 2002. Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological Methods* 7 (4): 422-445.

Subramanian, R., R. Insley, and R. Blackwell. 1993. Performance and readability: a comparison of annual reports of profitable and unprofitable corporations. *International Journal of Business Communication* 30 (1): 49-61.

Tan, H. T., E. Wang, and B. Zhou. 2014. When the use of positive language backfires: the joint effect of language sentiment, readability, and investor sophistication on earnings judgments. *Journal of Accounting Research* 52 (1): 273-302.

Tan, H. T., E. Wang, and B. Zhou. 2015. How does readability influence investors' judgments? Consistency of benchmark performance matters. *The Accounting Review* 90 (1): 371-393.

Thayer, J. 2011. Determinants of investors' information acquisition: Credibility and confirmation. *The Accounting Review* 86 (1): 1-22.

Turner, C.W. 2001. Accountability demands and the auditor's evidence search strategy: The influence of reviewer preferences and the nature of the response (belief vs. action). *Journal of Accounting Research* 39 (3): 683-706.

You, H., and X. Zhang. 2009. Financial reporting complexity and investor underreaction to 10-K information. *Review of Accounting Studies* 14 (4): 559-586.

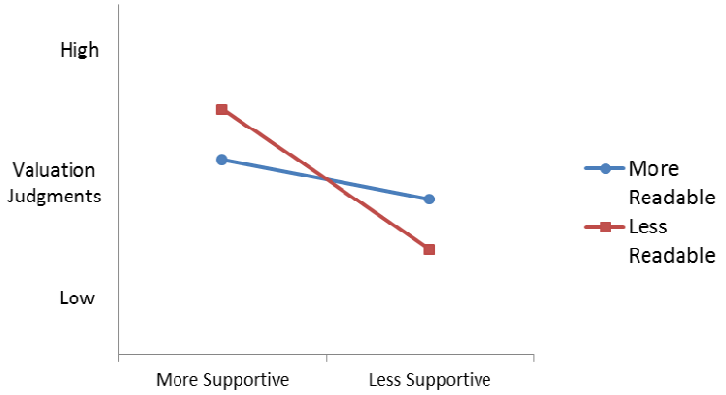
Wilks, T. J. 2002. Predecisional distortion of evidence as a consequence of real-time audit review. *The Accounting Review* 65 (1): 51-71.

Zhao, X., J. G. Lynch, and Q. Chen. 2010. Reconsidering Baron and Kenny: myths and truths about mediation analysis. *Journal of Consumer Research* 37 (2): 197-206.

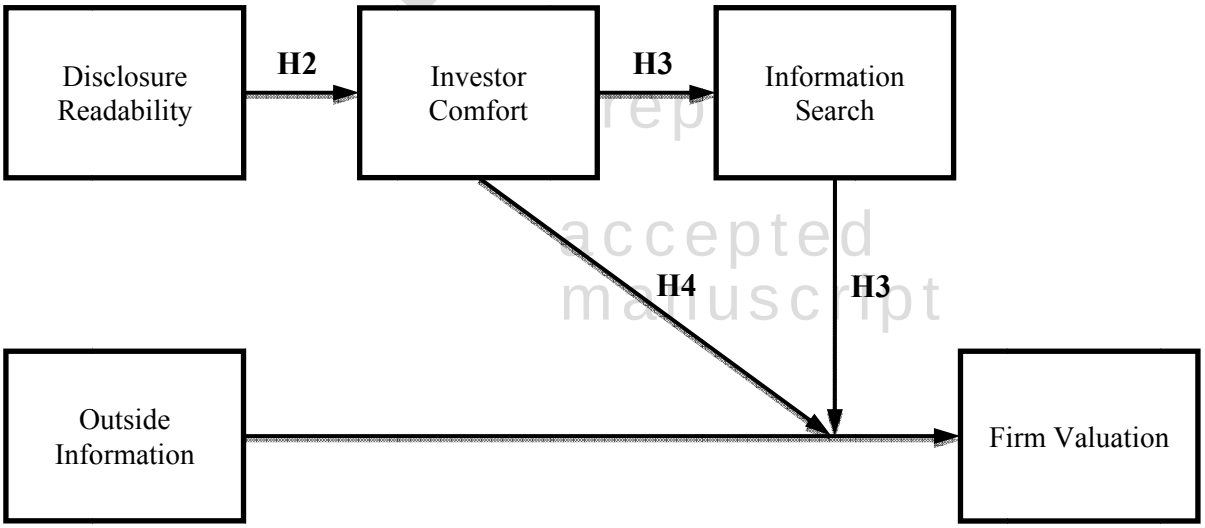
American Accounting Association
preprint
accepted manuscript

FIGURE 1
Theory and Predicted Results

Panel A. Predicted Pattern of Results (H1)



Panel B. Theory and Hypotheses

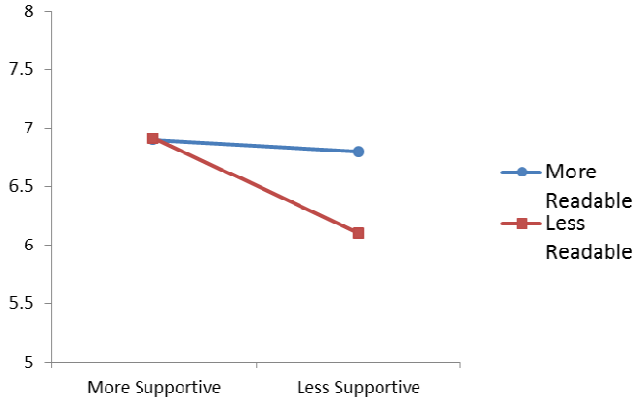


Accounting Association
rep
accepted manuscript

Figure 1, Panel A, graphically depicts our predicted and observed mean values for participants' final valuation judgments, adjusted for initial valuation judgments, by condition. Before (after) information containing our manipulations is provided, participants indicate their initial (final) valuation judgments on an 11-point scale asking what they believe to be an appropriate value for Jackson's (1 = very low, 11 = very high). Panel B provides a depiction of our theory and hypotheses.

FIGURE 2
Adjusted Final Valuation Judgments

Panel A. Results – All Participants (n = 203)



American Accounting Association

Panel B. Results – Participants Who *Did Not Access* (left, n = 75) and Participants Who *Accessed at Least One* (right, n = 128) Outside Information Source

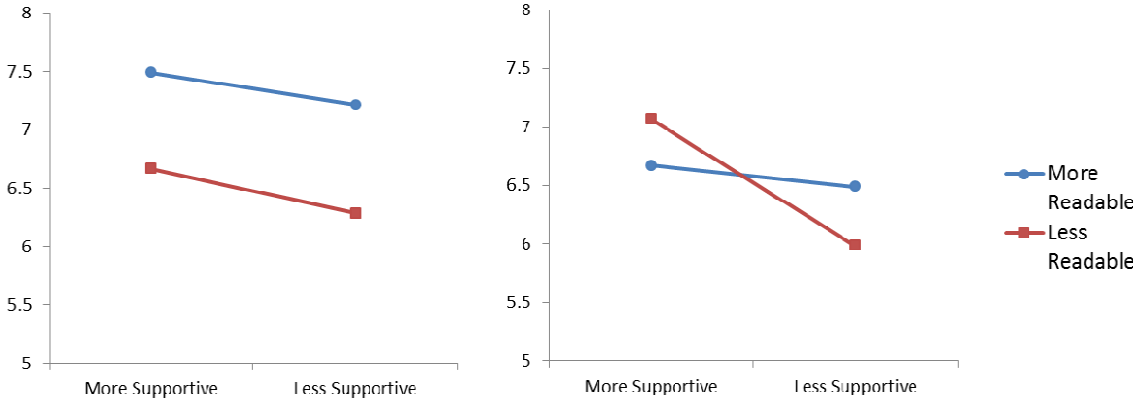
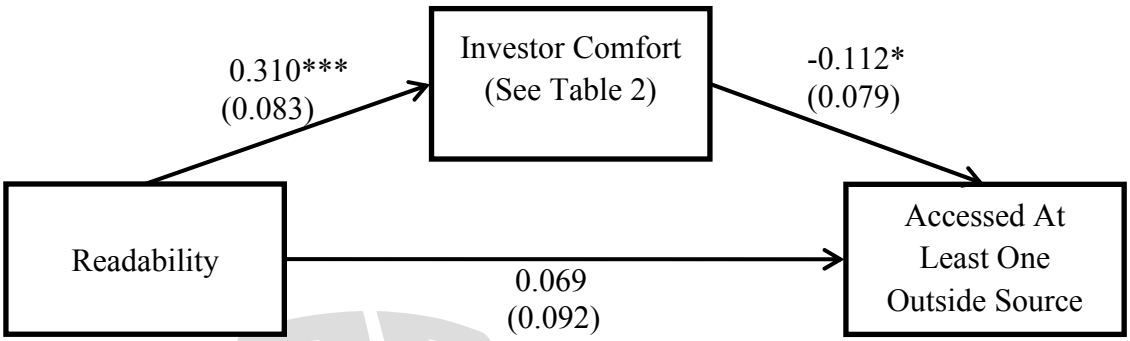


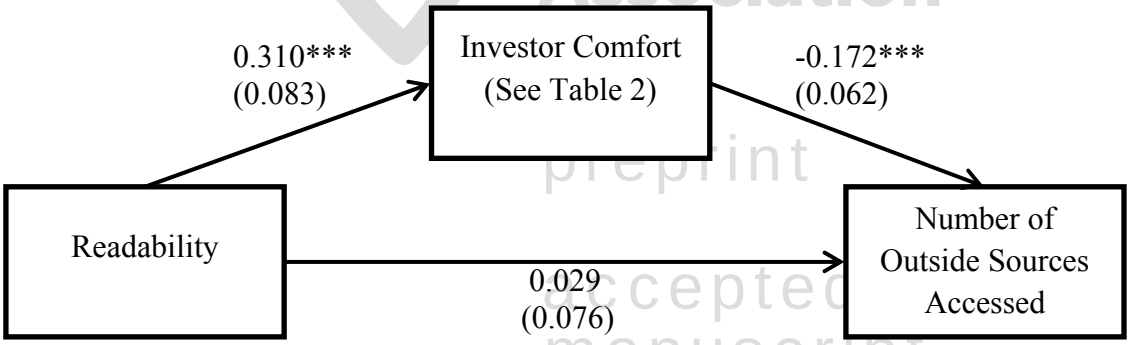
Figure 2, Panel A graphically depicts observed mean values for participants' final valuation judgments, adjusted for initial valuation judgments, by condition. Before (after) information containing our manipulations is provided, participants indicate their initial (final) valuation judgments on an 11-point scale asking what they believe to be an appropriate value for Jackson's (1 = very low, 11 = very high). Panel B graphically depicts observed mean values for participants' final valuation judgments, adjusted for initial valuation judgments, by condition, in the subsample of participants that did not (left side) and did (right side) access any of the three available outside sources of information.

FIGURE 3
Indirect Effect of Readability (through Investor Comfort) on Information Acquisition

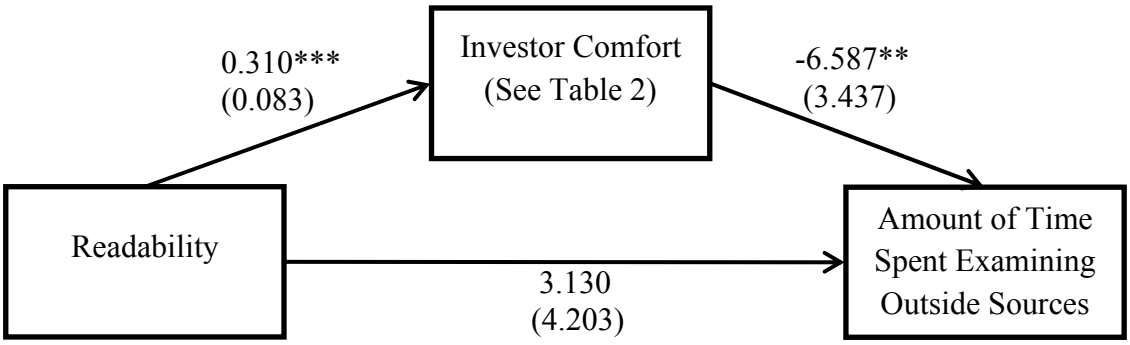
Panel A. Mean and (Standard Error) for the Effect on Accessing at Least One Outside Source



Panel B. Mean and (Standard Error) for the Effect on Number of Outside Sources Accessed



Panel C. Mean and (Standard Error) for the Effect on Amount of Time Spent Examining Outside Sources



American Accounting Association
preprint
accepted manuscript

FIGURE 3
(Continued)

Panel D. Mean and (Standard Error) for the Effect on Depth of Processing

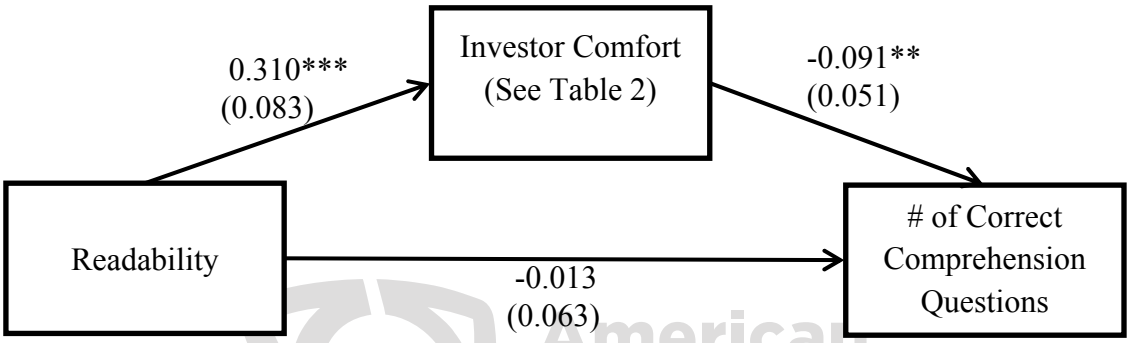


Figure 3 displays the observed coefficients and (standard errors) for our tests of H1 and H2. Readability is coded as -1 for the low readability condition and 1 for the high readability condition. We use four different measures as proxies for participants' information search: whether participants accessed at least one source of outside information (yes = 1, no = 0, see Panel A), the number of outside information sources accessed (0, 1, 2, or 3, see Panel B), the total amount of time spent examining outside information (in seconds, see Panel C), and the number of correct responses to the comprehension check questions about the outside information (see Panel D).*, **, and *** indicate one-tailed significance at less than 0.10, 0.05, and 0.01 levels, respectively.

American Accounting Association
preprint
accepted manuscript

TABLE 1
The Effect of Disclosure Readability and Outside Information on Valuation Judgments

Panel A. Unadjusted and Adjusted Valuation Judgments – Mean [Standard Error]

Disclosure Readability	Content of Outside Information	n	Unadjusted Initial Valuations	Unadjusted Final Valuations	Final Valuations Adjusted for Initial Valuations
More	More Supportive	50	6.28 [0.114]	6.98 [0.205]	6.90 [0.227]
	Less Supportive	51	6.20 [0.084]	6.82 [0.258]	6.80 [0.224]
Less	More Supportive	51	6.04 [0.128]	6.82 [0.222]	6.91 [0.225]
	Less Supportive	51	6.14 [0.131]	6.08 [0.262]	6.10 [0.224]

Panel B. ANCOVA Model of Final Valuation Judgments

Source of Variation	SS	df	MS	F-Statistic	p-value
Initial Valuation	66.11	1	66.11	25.80	<0.001
Readability	6.04	1	6.04	2.36	0.126
Outside Information	10.54	1	10.54	4.11	0.022†
Readability * Outside Information	6.47	1	6.47	2.53	0.057†
Error	507.38	198	2.56		

Panel C. Tests of Simple Effects

Effect of:	df	SS	F-Statistic	p-value
Outside Info. Given More Readable Disclosure	1	0.24	0.09	0.759
Outside Info. Given Less Readable Disclosure	1	16.84	6.57	0.006†
Readability Given More Supportive Outside Info.	1	0.003	0.00	0.972
Readability Given Less Supportive Outside Info.	1	12.63	4.93	0.028

Table 1, Panel A, presents mean values for participants' initial valuation judgments, final valuation judgments, and final valuation judgments adjusted for initial valuation judgments. Before (after) viewing the firm disclosure that contained our readability manipulation, participants indicate their initial (final) valuation judgments on an 11-point scale asking what they believe to be an appropriate value for Jackson's (1 = very low, 11 = very high). Panel B presents our ANCOVA results testing for the effects of our manipulations on valuation judgments, while Panel C presents the simple main effects.
†One-tailed (or equivalent), given our directional predictions.

American Accounting Association
preprint
accepted manuscript

TABLE 2
The Effect of Disclosure Readability on Investor Comfort

Panel A. Descriptive Statistics for Investor Comfort Measures – Mean [Standard Error]

Readability Condition	N	Investor Reliance	Investor Confidence	Investor Comfort (Factor)
More	101	5.59 [0.08]	5.17 [0.11]	0.31 [0.10]
Less	102	5.03 [0.12]	4.76 [0.12]	-0.31 [0.14]
Combined	203	5.31 [0.08]	4.97 [0.08]	0.00 [0.09]

Panel B. ANOVA. The Effect of Disclosure Readability on Investor Comfort Factor

Source of Variation	SS	df	MS	F-Statistic	p-value
Readability	19.47	1	19.47	13.78	<0.001[†]
Error	284.14	201	1.41		

Table 2, Panel A, presents participants' mean ratings of investor reliance and confidence, as well as a factor score from a principal component analysis for these two measures (*Investor Comfort Factor*). This factor accounts for the majority of variance in the measures (eigenvalue = 1.503, variance explained = 75.2%). For *Investor Reliance*, participants rate their agreement with the statement, "I felt like I could rely on the information in the press release"(1 = strongly disagree, 7 = strongly agree). For *Investor Confidence*, participants rate their agreement with the statement "I am confident in my ability to evaluate Jackson's as an investment"(1 = strongly disagree, 7 = strongly agree). Both of these measures were collected *after* viewing the firm disclosure that contained our readability manipulation, but *before* being presented with the opportunity to view the outside sources of information containing our information manipulation. Panel B presents ANOVA results testing the effect of readability on *Investor Comfort*.

[†]One-tailed (or equivalent), given our directional predictions.

American Accounting Association
accepted manuscript

TABLE 3
The Effect of Disclosure Readability on Access of Outside Information

Panel A. Descriptive Statistics for Access of Outside Information – Count [Proportion]

Readability Condition	N	Analyst Report	Analyst Consensus	News Story	Sum (Total Views)
More	101	30 [0.297]	38 [0.376]	38 [0.376]	106
Less	102	31 [0.304]	45 [0.441]	38 [0.373]	114
Combined	203	61 [0.300]	83 [0.409]	76 [0.374]	220

Panel B. Nominal Logistic Regressions. The Effect of Disclosure Readability on Participants' Propensity to Access Each Source of Outside Information

Analyst Report

Source of Variation	Estimate	Std. Error	χ^2	p-value
Intercept	-0.845	0.153	30.47	<0.001
Readability	0.016	0.153	0.01	0.457†

Analyst Consensus

Source of Variation	Estimate	Std. Error	χ^2	p-value
Intercept	-0.371	0.143	6.72	0.010
Readability	0.135	0.143	0.88	0.174†

News Story

Source of Variation	Estimate	Std. Error	χ^2	p-value
Intercept	-0.513	0.145	12.53	<0.001
Readability	-0.008	0.145	0.00	0.957

Table 3, Panel A, presents the number of participants who accessed each source of outside information, separately presenting counts and proportions for participants in the More and Less Readable conditions. Panel B presents nominal logistic regressions testing whether readability affects participants' propensity to access each source of outside information.
†One-tailed (or equivalent), given our directional predictions.

American Accounting Association
preprint
accepted
manuscript

TABLE 4
Effect of Information Acquisition and Investor Comfort on Final Valuation Judgments

Term	Estimate	Std. Error	t-Statistic	p-value	
Intercept	2.431	0.854	2.85	0.005	
Initial Valuation	0.674	0.133	5.05	<0.001	
Readability	0.069	0.113	0.62	0.539	
Outside Information	0.167	0.110	1.52	0.130	
Readability * Outside Information	-0.135	0.112	-1.20	0.230	
Access (# of Sources)	0.207	0.188	1.10	0.271	
Search (Time)	-0.005	0.003	-1.80	0.073	
Encode (Comprehension)	0.055	0.216	0.25	0.800	
Investor Comfort	0.330	0.094	3.51	<0.001	
Access (# of Sources) * Outside Information	-0.158	0.187	-0.84	0.401	H3
Search (Time) * Outside Information	-0.002	0.003	-0.56	0.577	H3
Encode (Comprehension) * Outside Information	0.477	0.215	2.21	0.014†	H3
Investor Comfort * Outside Information	-0.128	0.094	-1.37	0.087†	H4

Table 4 presents our tests of H3 and H4 for our full sample, examining the joint effects of information acquisition and investor comfort on participants' valuation judgments. Readability is coded as -1 for the low readability condition and 1 for the high readability condition. Outside Information is coded as -1 for the less supportive condition and 1 for the more supportive condition. Before (after) information containing our manipulations is provided, participants indicate their initial (final) valuation judgments on an 11-point scale asking what they believe to be an appropriate value for Jackson's (1 = very low, 11 = very high). To test H3, we examine whether the content of outside information affects participants' valuation judgments more as information acquisition increases by examining the interaction between the content of the outside information and three features of participants' information acquisition – access or the number of outside sources accessed (# of Sources), search or the total time spent on outside sources (Time), encode or the number of correct responses to the three comprehension check questions about the outside sources (Comprehension). To test H4, we also examine whether the effect of outside information is decreasing in investor comfort by examining the interaction between the content of the outside information and investor comfort.

†One-tailed, given our directional predictions.

American Accounting Association
Presented as accepted manuscript

TABLE 5
Valuation Judgments by Accessing of Outside Information Source

Panel A. Adjusted Final Valuation Judgments by whether Participants Accessed at Least One Outside Information Source, Mean [Standard Error]

Content of Outside Information	Number of Sources Accessed			
	None		At Least One	
	More Readable	Less Readable	More Readable	Less Readable
More Supportive	7.49 [0.524] n = 13	6.66 [0.416] n = 20	6.67 [0.237] n = 37	7.07 [0.260] n = 31
Less Supportive	7.21 [0.387] n = 23	6.28 [0.426] n = 19	6.49 [0.272] n = 28	5.99 [0.254] n = 32

Panel B. ANCOVA Model of Adjusted Final Valuation Judgments for Participants Who *Did Not Access Any* Outside Information Sources

Source of Variation	SS	df	MS	F-Statistic	p-value
Initial Valuation	42.51	1	42.51	12.37	<0.001
Readability	13.48	1	13.48	3.92	0.026†
Outside Information	1.92	1	1.92	0.56	0.457
Readability * Outside Information	0.05	1	0.05	0.01	0.909
Error	240.60	70	3.44		

Panel C. ANCOVA Model of Adjusted Final Valuation Judgments for Participants Who *Accessed At Least One* Outside Information Source

Source of Variation	SS	df	MS	F-Statistic	p-value
Initial Valuation	14.53	1	14.53	7.02	0.009
Readability	0.09	1	0.09	0.04	0.834
Outside Information	12.47	1	12.47	6.02	0.008†
Readability * Outside Information	6.42	1	6.42	3.10	0.040†
Error	254.54	123	2.07		

Table 5, Panel A, presents mean values for participants' final valuation judgments (adjusted for their initial valuation judgments) separately for participants who do and do not access at least one additional source of information. Panel B presents our ANCOVA results testing for the effects of our manipulations on valuation judgments for participants who did not access any outside information sources. Panel C presents our ANCOVA results testing for the effects of our manipulations on valuation judgments for participants who accessed at least one outside information source.
†One-tailed (or equivalent), given our directional predictions.

American Accounting Association
preprint
accepted manuscript

Table 6. Effects of Information Acquisition and Investor Comfort on Final Valuation Judgments for Participants Who *Accessed At Least One* Outside Information Source (n = 128)

Term	Estimate	Std. Error	t-Statistic	p-value	
Intercept	2.064	1.454	1.42	0.159	
Initial Valuation	0.667	0.229	2.92	0.004	
Readability	-0.046	0.125	-0.37	0.712	
Outside Information	0.254	0.126	2.02	0.045	
Readability * Outside Information	-0.137	0.124	-1.1	0.272	
Access (# of Sources)	0.410	0.222	1.84	0.068	
Search (Time)	-0.004	0.003	-1.71	0.089	
Encode (Comprehension)	0.013	0.202	0.06	0.949	
Investor Comfort	0.291	0.102	2.86	0.005	
Access (# of Sources) * Outside Information	-0.113	0.221	-0.51	0.610	H3
Search (Time) * Outside Information	-0.001	0.003	-0.42	0.672	H3
Encode (Comprehension) * Outside Information	0.387	0.201	1.92	0.029†	H3
Investor Comfort * Outside Information	-0.194	0.101	-1.91	0.029†	H4

Table 6 presents our tests of H3 and H4 for participants who accessed at least one outside information source, examining the joint effects of information search and investor comfort on participants' valuation judgments. Readability is coded as -1 for the low readability condition and 1 for the high readability condition. Outside Information is coded as -1 for the less supportive condition and 1 for the more supportive condition. Before (after) information containing our manipulations is provided, participants indicate their initial (final) valuation judgments on an 11-point scale asking what they believe to be an appropriate value for Jackson's (1 = very low, 11 = very high). To test H3, we examine whether the content of outside information affects participants' valuation judgments more as information acquisition increases by examining the interaction between the content of the outside information and three features of participants' acquisition – access or the number of outside sources accessed (# of Sources), search or the total time spent on outside sources (Time), and encode or the number of correct responses to the three comprehension check questions about the outside sources (Comprehension). To test H4, we also examine whether the effect of outside information is decreasing in investor comfort by examining the interaction between the content of the outside information and investor comfort.

†One-tailed, given our directional predictions.

American Accounting Association
Accepted Manuscript