

The Impact of Graphical Displays of Pro Forma Earnings Information on Professional and Nonprofessional Investors' Earnings Judgments

Working paper

William N. Dilla
Associate Professor of Accounting
wdilla@iastate.edu
515-294-1685

Diane J. Janvrin
Associate Professor of Accounting
djanvrin@iastate.edu
515-294-9450

Cynthia Jeffrey
Associate Professor of Accounting
cjeffrey@iastate.edu
515-294-9427

College of Business
Iowa State University
2230 Gerding Business Building
Ames, IA 50011-1350

July 21, 2010

The authors wish to thank Enumerate, Inc. for allowing us to use their Numerator!Publish software in our experimental materials. We thank Mary Curtis, Don Finn, Christine Nolder and participants at the University of North Texas, the 2007 AAA Accounting, Behavior, and Organizations MidYear Meeting and Iowa State Accounting/Finance Research Seminar Series for helpful feedback. This project was supported by an Iowa State University 2004 College of Business Summer Research Grant. We are grateful for the assistance of Sarah Swanson and Rick Wernimont in experiment material design, Nick Jensen in software programming, and Pat Wagaman in preparing the experiment questionnaire interface.

Data Availability: Contact the first author.

The Impact of Graphical Displays of Pro Forma Earnings Information on Professional and Nonprofessional Investors' Earnings Judgments

Abstract

When managers present non-GAAP performance measures, Securities and Exchange Commission Regulation G requires that these numbers be reconciled to GAAP. However, the regulation specifies neither the placement nor format of the reconciliation of graphical disclosures of non-GAAP measures. Managers may provide graphical displays of non-GAAP information in an annual report, but text accompanying the graphs may not fully reconcile the adjusted measures to GAAP. This study extends prior research that examines the influence of textual disclosure of pro forma earnings to examine the effects of graphical displays of non-GAAP earnings information on professional and nonprofessional investors' earnings judgments. Participants viewed a simulated Investor Relations web site for a large drug retailer containing graphical interactive data views (IDVs) and made judgments regarding fiscal year earnings. We find that when pro forma earnings are higher than GAAP earnings, nonprofessional investors' current earnings judgments were higher when viewing graphical IDVs containing pro forma as opposed to GAAP-only earnings information, while the earnings judgments of professional investors are not affected by the presence of graphical IDVs containing pro forma earnings. Unexpectedly, both professional and nonprofessional investors' earnings potential judgments were higher when graphical IDVs contained pro forma earnings information. Our findings that graphical disclosures differentially influence investor judgments suggest a need to further examine the effects of pro forma earnings presentation format and IDV content in online environments, especially as new reporting initiatives require financial information to be posted on Investor Relations web sites in eXtensible Business Reporting Language (XBRL), which facilitates the generation of user-defined graphical displays of financial data.

The Impact of Graphical Displays of Pro Forma Earnings Information on Professional and Nonprofessional Investors' Earnings Judgments

Introduction

The role of technology in corporate web sites is rapidly evolving, and new ways of presenting data continue to emerge. Presentation of earnings information on corporate web sites is an important issue for users and regulators (SEC, 2008a). Prior to 2003, managers could present non-GAAP earnings measures, that is, earnings adjusted for items deemed by management to be transitory or non-representative of future earnings, without additional disclosure. This presentation is commonly referred to as "pro forma" financial information (Alpert, 2001; Johnson & Schwartz, 2005).¹ In response to concerns about the reliability of pro forma information, the SEC issued Regulation G (SEC, 2003b), which established disclosure rules that require pro forma information released by the company to be reconciled to the relevant GAAP measures. Previous research (e.g., Frederickson & Miller, 2004) found that inclusion of pro forma information in textual earnings disclosures had an impact on nonprofessional investor judgments. Elliott (2006) and Allee et al. (2007) found that reconciling textual pro forma information to GAAP could reduce or eliminate the impact of pro forma disclosures on judgments of less sophisticated investors. We extend prior research by examining the impact of graphical displays of pro forma earnings information on judgments of professional and nonprofessional investors.

While all pro forma information is subject to the reconciliation requirements in Regulation G, there is no current guidance on either the placement or the format of the pro

¹ The SEC (2001) refers to presentation of earnings and results of operations on the basis of methodologies other than Generally Accepted Accounting Principles as non-GAAP, or "pro forma" financial information. In this usage, the term has no precisely defined meaning and no uniform characteristics, as it is used to refer to any presentation where selected items have been omitted from GAAP earnings.

forma-to-GAAP reconciliation for items such as supplemental graphical disclosures which might appear either in a company's annual report or elsewhere on a company's web site. If the information is included in multiple formats, such as textual and graphical, there is no mandate that the reconciliation must also appear in multiple formats or that the reconciliation be viewable simultaneously (SEC, 2003a). Companies may provide graphical displays of pro forma information in an annual report, but text accompanying the graphs may not fully reconcile the adjusted data to GAAP (e.g., Colgate, 2009).²

Further, many companies (e.g., BP, 2009; McDonalds, 2009) now use interactive graphical display tools or data views (IDVs) in Investor Relations web sites (Dilla, Janvrin, & Raschke, 2010; Economist Intelligence Unit, 2003; Thomson Financial, 2007). IDVs allow users to select from a variety of financial and non-financial information items; some IDVs even allow users to view customized displays of selected information in either graphical or tabular format (Baldwin, Brown, & Trinkle, 2006; Dilla et al. 2010). The use of IDVs is expected to increase significantly because the Securities and Exchange Commission (SEC) recently mandated that companies furnish financial disclosures in eXtensible Business Reporting Language (XBRL), an information format which facilitates the creation of IDVs (SEC, 2008b, 2009; Twarowski, 2008). Because IDVs of financial information may be user-generated, rather than produced by the company, investors may view non-GAAP information with no reconciliation to GAAP. The SEC has not yet regulated graphical disclosures with respect to either content or format. The Pozen Committee has called for the SEC to issue additional guidance regarding the use of corporate

² The Colgate's 2009 interactive annual report (Colgate, 2009) displays graphs of adjusted gross profit margin, operating profit, and earnings per share, with a text description of adjusting items to the right of each graph. However, the reader must navigate to a separate page to view complete pro forma-to-GAAP reconciliations.

web sites for disclosures of corporate information, including the treatment of pro forma financial disclosures and GAAP reconciliations (SEC, 2008a, 15).

Our study extends earlier research that examines the effects of textual disclosure of pro forma earnings in a press release and accompanying income statement (Elliott, 2006; Frederickson & Miller, 2004) to investigate whether presenting pro forma financial information using graphical displays influences professional and nonprofessional investors' judgments. Because the SEC does not currently regulate graphical disclosures and has been encouraged to develop new guidance on this issue (SEC, 2008a), research in this area has the potential to influence regulation and public policy. We also investigate how the presence of textual and graphical pro forma earnings disclosures affect investors' financial information viewing behavior by tracking the amount of time that individuals spend examining various financial disclosure components (i.e., earnings press release, income statement, IDVs, etc.). Our study is unique in that it examines information viewing behavior in an online environment containing both textual and interactive graphical information, whereas earlier research only examines online viewing of textual information (e.g., Hodge, Kennedy, & Maines, 2004).

Fifty-seven professionals with at least two years of professional experience and whose job duties included financial statement analysis and securities trading participated in the study. One hundred forty-six MBA students served as proxies for nonprofessional investors. All participants viewed a simulated Investor Relations web site for a large drug retailer which contained textual disclosures and graphical IDVs. Non-recurring items caused the most recent quarterly and annual pro forma income to be higher than GAAP income. We manipulated IDV content (i.e., GAAP earnings graphs only, or GAAP and pro forma earnings graphs) in order to test our hypotheses that: (1) nonprofessional investors' earnings judgments would be higher

when viewing pro forma relative to GAAP IDV earnings displays and (2) professional investors' earnings judgments would not be affected by viewing pro forma relative to GAAP IDV earnings displays. We also manipulated textual disclosure content (i.e., GAAP earnings disclosures only, or pro forma earnings reconciled to GAAP) in order to determine whether the effects of pro forma IDV information were contingent on the type of textual financial information available to the user. Our results indicate that nonprofessional investors' current fiscal year earnings evaluations are higher when examining graphical IDVs containing pro forma earnings information, while professional investors' evaluations do not significantly differ, regardless of whether graphical IDVs contain pro forma or GAAP-only earnings information. At the same time, earnings potential judgments of both groups are higher when graphical IDVs contain pro forma earnings information.

Supplemental analyses show that nonprofessional investors presented with textual earnings disclosures reconciled from pro forma to GAAP spend relatively more time viewing the income statement relative to other web site pages than do those presented with GAAP-only textual disclosures. However, professional investors spend proportionately *less* time viewing the income statement when it contains pro forma earnings reconciled to GAAP. At the same time, professional investors spend relatively more time examining the earnings press release and company overview when the income statement presents pro forma earnings reconciled to GAAP. Taken together, these findings suggest that nonprofessional investors acquire information on nonrecurring items from the pro forma-to-GAAP earnings reconciliation. On the other hand, even with the SEC reconciliation requirements, professional investors appear to acquire information on nonrecurring items from the press release narrative rather than the earnings reconciliation.

Theoretical development and hypotheses

Textual disclosures

Prior research on the textual disclosure of pro forma earnings indicates that nonprofessional investors make higher judgments of company value when the company discloses pro forma earnings that are higher than GAAP earnings (Frederickson & Miller, 2004). Further, the disclosure of pro forma earnings did not affect professionals' judgments of company value (Frederickson & Miller, 2004). Frederickson and Miller (2004) report that nonprofessional investors did not believe the pro forma information changed their earnings evaluations. They interpret this finding as an indication that nonprofessional investors' stock price adjustments were influenced through unintentional cognitive effects, rather than reliance on pro forma earnings information because it was perceived to be informative. Frederickson and Miller (2004) also suggest that professionals' lack of sensitivity to pro forma earnings disclosures results from the use of well-developed valuation models as opposed to simple heuristic models.

Elliott (2006) extends Frederickson and Miller's (2004) research by investigating the effects of a textual pro forma-to-GAAP reconciliation on investor judgments. Elliott's (2006) results are consistent with Frederickson and Miller (2004) for the conditions that did not include a reconciliation. Nonprofessional investors' earnings and investment judgments were higher when pro forma earnings were disclosed than when the earnings announcement contained GAAP-only earnings, and the disclosure of unreconciled pro forma earnings did not affect professionals' judgments. However, in the conditions where a reconciliation was present, earnings and investment judgments of nonprofessional investors presented with a reconciled pro forma earnings textual disclosure did not differ from those of nonprofessional investors provided

with GAAP-only disclosures. Unexpectedly, the earnings and investment judgments of professional investors were *higher* when presented with reconciled pro forma earnings disclosures than with either unreconciled pro forma or GAAP-only earnings disclosures. Further analysis indicates that professional investors' perceptions of the reliability of reconciled information explain the unexpected effect of the reconciliation on judgments.

Graphical disclosures

Several studies have shown that most large publicly traded companies include one or more graphs of key financial variables in their annual reports (Beattie & Jones 1997, 2000; CICA, 1993; Dilla & Janvrin, 2010; Steinbart, 1989). The emergence of the Internet as a disclosure medium has facilitated the use of alternative display formats for both textual and graphical financial data, such as pdf file formats, hypertext, and multimedia (Hodge et al. 2004; Hodge & Pronk, 2006; Kelton & Yang, 2008). The continued development of technology used in corporate web sites has led to rapid changes in how corporate information is presented. Not only may some companies choose to present graphical displays of financial data, but many also use interactive graphical display tools or IDVs on Investor Relations web sites (Dilla et al. 2010; Economist Intelligence Unit, 2003; Thomson Financial, 2007). IDVs allow the user to choose what information is viewed (i.e., revenues, earnings, pro forma measures, balance sheet accounts, or cash flows); some also allow the user to determine the format of display (i.e., table or graph) (Dilla et al. 2010). The use of multiple graphical reporting formats by companies, the lack of clear guidance for reconciliations of non-GAAP measures presented in non-text formats, and the potential for investor-generated content and format that may not be subject to regulation all raise questions as to how such presentations might impact judgments.

Supporters of graphical presentation formats argue that they are effective since the visual sense is the dominant human sense (Ackerman, 1991; Ware, 2004). Research suggests financial information in graphs, rather than tables, may be easier for many financial statement users to process (Vessey, 1991; Vessey & Galletta, 1991) and may lead to better decisions (DeSanctis & Jarvenpaa, 1989), especially with respect to evaluating financial performance trends. Further, visual design elements of annual reports, such as graphical displays, are considered to be a form of rhetoric designed to convince the user that management's assertions are truthful (David, 2001; Graves, Flesher, & Jordan, 1996).

Cognitive psychology research suggests that the processing impact of information salience may be separate from that of information diagnosticity (Taylor & Fiske, 1978). Salient information is highly visible and easily noticed by the decision maker. The resulting focus on salient information can cause decision makers to overweight a cue (Fiske & Taylor, 1991; Wallsten, 1980). As the dominance of the visual sense increases the salience of graphical relative to textual information, investors may place more weight on information contained in graphical formats.

The extent to which investors view and rely on graphical displays may be contingent on their experience and knowledge level. Early information display research by Benbasat and Schroeder (1977) finds that less knowledgeable decision makers focus on an overview of data and consider all available information. In contrast, more knowledgeable decision makers search for specific details by requesting a limited number of specific reports. Since graphical displays emphasize an overview of the information, graphs may be a better fit for less knowledgeable decision makers' information search patterns. Alternatively, textual formats may be a better fit for more knowledgeable decision makers because they facilitate viewing specific details.

Recent research suggests that nonprofessional and professional investors' information viewing behavior differs with respect to online disclosures of accounting information (Hodge & Pronk, 2006). Specifically, Hodge and Pronk (2006) find that nonprofessional investors are more likely to use html format financial statements, while professional investors are more likely to use financial statements in pdf format. Since html links, as opposed to pdf displays, often provide access to interactive analysis tools, less experienced investors may be more likely to use IDVs.

Furthermore, Cardinaels (2008) provides evidence that graphs and tables have differential effects on judgments depending on the decision maker's level of task-relevant knowledge. He finds that less knowledgeable decision makers performing a complex decision task using cost accounting data displayed in graphs make more accurate decisions and perceive the task to be less difficult than those using tabular displays. In contrast, more knowledgeable decision makers expend more effort viewing information and make more accurate decisions when using tabular, as opposed to graphical displays. Both Hodge and Pronk's (2006) empirical results and Cardinaels' (2008) experimental findings suggest that nonprofessional investors may rely on pro forma earnings information displayed in a graphical format to a greater extent than professional investors.

Finally, Vera-Munoz, Kinney, and Bonner (2001) find that when data for an opportunity cost analysis are presented in an inappropriate format (i.e., as an earnings, instead of a cash flow statement), more experienced accountants are better able to identify relevant information. Experience level has no effect on identifying relevant information when information is presented appropriately. In the context of pro forma disclosures, textual displays must now include information on non-recurring items adjustments in a reconciliation of pro forma-to-GAAP numbers. This should facilitate evaluating the effects of non-recurring items on earnings (cf.

Elliott, 2006, p. 130), regardless of the investor's experience level. Regulation G (SEC, 2003b) does not require graphical displays to specifically include such information; the user has to look elsewhere in the financial disclosures to see details of non-recurring items. A less experienced investor who views graphical displays of pro forma earnings may not search for relevant information on the differences between pro forma and GAAP earnings. We thus argue that for nonprofessional investors, graphical displays of pro forma earnings information will be more salient than the non-graphical reconciling information, and that professionals will be less likely to rely on information displays that do not include reconciling information.

Hypotheses

In this study, we focus on graphical IDV content. Because of the difference in reliance on graphical displays discussed above for professional and nonprofessional investors, the effect of graphical IDVs containing pro forma earnings information and earnings judgments should also differ for the two groups. When pro forma earnings are higher than GAAP earnings, the presence of graphical IDVs containing pro forma earnings information should result in higher earnings judgments for nonprofessional investors. For professional investors, the presence of graphical IDVs of pro forma earnings information should not affect earnings judgments. This leads to the following hypotheses.

H1: When pro forma earnings are higher than GAAP earnings, nonprofessional investors' earnings judgments will be higher when graphical IDVs containing pro forma earnings information are present.

H2: When pro forma earnings are higher than GAAP earnings, professional investors' earnings judgments will not be affected by the presence of graphical IDVs containing pro forma earnings information.

Method

Task and experimental design

Participants viewed online information about a hypothetical company called Drugs R Us (DRU), which was modeled on a large retailer of pharmaceutical products and other health care items. The company was chosen because (1) it reported pro forma earnings in the past and (2) its Investor Relations web site includes an interactive financial information display. Materials were pilot tested with 16 graduate business students.

Participants first read a brief introduction to the experimental task, then navigated to a page that displayed an overview of DRU's operations (see Figure 1). From this page, participants could navigate to DRU's earnings press release, its financial statements, or "interactive financial history" pages, which were bar graph displays of key financial items.³ The press release and financial statements contained information on DRU's fourth quarter and annual financial performance for the current and previous year. The graphical displays presented annual performance measures for the current and previous four years (see Figure 2). After reviewing financial information on DRU, participants evaluated the company's current fiscal year earnings

³ The IDV displays used in this study were interactive since the user was able to select among graphical displays of pre-selected financial information, as in many of the interactive annual reports currently present on Investor Relations web sites (e.g., McDonalds, 2009). Other IDVs presently found on corporate Investor Relations web sites, such as Interactive Analyst (BP, 2009), allow users to custom-design graphical displays, choosing information items, periods to be displayed and graphical format. We chose the pre-selected displays for two reasons. First, we wanted to limit the display options open to participants, as the experimental task might have been difficult for participants without significant experience using IDVs. Second, limiting the available set of displays made it easier to track participants' information viewing behavior.

performance and future earnings potential on an 11-point scale ranging from Very Weak (0) to Very Strong (10).⁴ After confirming their responses, participants then completed a second questionnaire to gather data on demographics and experience with investing, financial statement analysis, and interactive data displays. The experimental software generated a log for each participant, recording the order of pages visited at the simulated web site and how much time was spent on each page. The log data were used to compute various process measures (e.g., relative time spent on graphical materials as a proportion of total viewing time) for each participant.

Insert Figures 1 and 2 about here.

The experiment used a 2 by 2 by 2 between-participants design as depicted in Figure 3. Independent variables were participant type (nonprofessional or professional), graphical IDV content (GAAP-only or including pro forma earnings), and textual disclosure content (GAAP earnings only or pro forma earnings reconciled to GAAP). Graphical IDV content was manipulated to test Hypotheses 1 and 2. Participants receiving GAAP-only graphical IDV content saw a menu bar as displayed in Figure 1. Those provided with GAAP and pro forma graphical IDV content saw the menu bar displayed in Figure 2. These participants had the option of viewing graphical displays of either pro forma or GAAP information for net earnings, earnings per share, and cash flows from operations and operating profit.

Insert Figure 3 about here.

⁴ In this paper, we only report detailed data on these two measures, as these were the same earnings performance measures gathered and reported by Elliott (2006). We also asked participants to evaluate the company's fourth quarter earnings performance, overall earnings performance, and desirability as an investment.

We manipulated textual disclosure content, as earnings press releases may include GAAP-only earnings or pro forma earnings reconciled to GAAP. Based on Elliott's (2006) results, nonprofessional investors' earnings judgments should be the same under these two textual presentation formats. However, we manipulated textual content because of the possibility of interaction between text and graphical IDV content effects for non-professional investors. Three possible patterns of results could occur. First, nonprofessional investors may find graphical IDV format earnings disclosures to be more salient than textual disclosures, regardless of textual disclosure content. This suggests a main effect for graphical IDV content, as the effect of viewing the IDV information will be the same, regardless of the textual information. Second, nonprofessional investors' earnings judgments may be affected by pro forma earnings IDV content only in the case where the textual disclosures contain GAAP-only information (i.e., Cell A vs. Cell B in Figure 3). When the textual disclosures already disclose pro forma information, the presence of pro forma earnings IDV content will not have an additional effect on their judgments. Third, nonprofessional investors' earnings judgments may only be affected by pro forma earnings IDV content in the case where the textual disclosures contain pro forma information (i.e., Cell C vs. Cell D). In contrast to the second scenario, this assumes that the nonprofessional investor will only attend to information presented in IDVs when it is consistent with textual information. The second and third scenarios both suggest an interaction between textual disclosure and IDV content.

Press release and income statement content varied across textual disclosure conditions. Participants in the GAAP-only textual disclosure condition viewed a press release which disclosed GAAP earnings, followed by a discussion of non-recurring items. The GAAP income statement included footnotes describing non-recurring items. The press release in the reconciled

pro forma textual disclosure condition disclosed earnings excluding non-recurring items, followed by a discussion of the non-recurring items. The income statement in this condition presented fourth quarter and annual earnings (loss) and diluted earnings per common share excluding non-recurring items, followed by sequential reconciliations of these measures to GAAP earnings (loss) and earnings per share (see Figure 4). Footnotes described the non-recurring items.

Insert Figure 4 about here.

Press release

The press release was patterned after an actual earnings announcement for the company on which the experimental materials were based. The first part of the earnings announcement gave comparative sales information; this section was the same across experimental conditions. The second part was a narrative that stated current and comparative amounts for fourth quarter and annual earnings. This section presented either GAAP-only or pro forma earnings, depending on the textual disclosure condition. Consistent with the company disclosures used to develop the experimental materials, pro forma earnings were described in the press release as comparable earnings (i.e., earnings excluding non-recurring items). The third part of the press release gave details of non-recurring items, and was identical across experimental conditions. Non-recurring items were: (1) a charge for restructuring and asset impairment costs, which affected the current quarter and year's results and (2) a litigation settlement gain, which affected the previous year's results.

As with other pro forma earnings judgment studies (Frederickson & Miller 2004; Elliott 2006), pro forma earnings for both the current quarter and year were greater than GAAP earnings. Drugs R Us reported a fourth quarter 2006 GAAP loss of (\$0.34) per share and a pro

forma profit of \$0.48 per share. For the 2006 fiscal year, GAAP and pro forma profits were \$1.01 and \$1.79, respectively. However, consistent with the company used to develop the experimental materials, previous year pro forma annual earnings were less than GAAP earnings (see Figure 4). The fourth and final section of the press release presented summary information regarding changes in the company's operations. This section was also identical across experimental conditions. Income statements, balance sheets, and statements of retained earnings were presented as separate, hyperlinked documents.

Participants

One hundred forty-six MBA students enrolled in an introductory financial accounting class at a large state university participated in the study as surrogates for nonprofessional investors. Libby, Bloomfield, and Nelson (2002) argue that experiments studying the judgments of nonprofessional investors only require participants who possess basic accounting and investing knowledge. Further, Elliott et al. (2007) classify evaluating earnings performance in the presence of pro forma information as a task with low integrative complexity.⁵ They suggest that early-stage MBA students are appropriate participants in studies involving such tasks. Therefore, the participants in our study appear to be reasonable surrogates for evaluating the effects of pro forma disclosures on nonprofessional investor earnings judgments.

Professional investors were 57 individuals who were involved in portfolio management. Their work experience ranged from two to 24 years, with a mean of 10.58 years. Their job duties involved financial statement analysis and making recommendations for the purchase and sale of

⁵ Table 1 of Elliott et al. (2007) specifically classifies Frederickson and Miller (2004) and Elliott (2006) as studies with experimental tasks having low levels of integrative complexity.

securities. They were recruited from the portfolio management departments of four large financial services firms.

We used total time spent viewing financial web site information (other than the introductory page) as an indicator of whether participants took the task seriously. Total information viewing time ranged from 62 to 1,962 seconds, with a mean of 800.12 seconds and standard deviation of 276.27. We eliminated one nonprofessional participant based on total viewing time, as this value (62 seconds) was lower than two standard deviations below the mean (247.58 seconds), and 79.7 percent lower than the participant with the next highest total viewing time (303 seconds). We also dropped four nonprofessional and two professional participants who did not complete the post-experimental questionnaire. Thus, we report results from 141 nonprofessional and 55 professional investors.⁶

As expected, nonprofessional participants had less work experience on average (4.2 years) than professionals (10.6 years) ($p < 0.001$). The mean number of accounting courses taken by professionals was higher than for nonprofessionals (4.8 versus 2.0; $p < 0.001$); professionals also reported taking a significantly higher number of finance courses on average than nonprofessionals (6.8 versus 1.5; $p < 0.001$). Higher proportions of professional investors had personally bought or sold individual securities (94.5 versus 27.7 percent; $p < 0.001$) and mutual funds (96.4 versus 39.0 percent; $p < 0.001$) than nonprofessional investors. A higher proportion of professional than nonprofessional investors had used financial statement information of a company that reported pro forma earnings to evaluate company performance (92.7 versus 7.8 percent; $p < 0.001$).

⁶ All reported results are substantively the same with the entire sample, except as reported below.

We asked participants to report their level of familiarity with financial statement information, interactive data displays (in general and specifically to display financial information), the concept of pro forma earnings, and pro forma-to-GAAP earnings reconciliations. On average, professionals reported higher levels of familiarity with financial statement information, with interactive displays of financial information, the concept of pro forma earnings, and pro forma-to-GAAP earnings reconciliations ($p < 0.01$). Level of familiarity with interactive data displays in general did not differ across participant groups ($p = 0.52$). Taken together, these data indicate that the professional participants have more general investment experience than the nonprofessionals. Further, the professional participants have more specific knowledge about and experience with pro forma earnings information.

Procedure

Student participants completed the experimental task in a computer lab under the supervision of one of the researchers. Thirty-seven professional participants also completed the experimental task in a computer lab under the supervision of one of the researchers. The remaining 20 professional participants completed the experimental task at their desks, after trading hours, so that their completion of the experimental task would not be interrupted.

Results

Hypotheses tests

Table 1 displays descriptive statistics for current fiscal year earnings (*EARNFY*) and future earnings potential (*EARNPOT*) judgments by participant type and experimental

condition.⁷ H1 predicts that when pro forma earnings are higher than GAAP earnings, nonprofessional investors' earnings judgments will be higher when graphical IDVs containing pro forma earnings information are present. H2 predicts that when pro forma earnings are higher than GAAP earnings, professional investors' earnings judgments will not be affected by the presence of graphical IDVs containing pro forma earnings information. H1 is tested by comparing the mean value of the dependent measure for cells B and D in Figure 3 to the mean value for cells A and C. H2 is tested by comparing the mean value of the dependent measure for cells F and H to the mean value for cells E and G. To test H1 and H2, we used a set of orthogonal planned comparisons to analyze participants' earnings judgments (Buckless & Ravenscroft, 1990). This set of comparisons also allows us to assess possible main effects and interactions for textual disclosure content.

Table 2 presents the results for the planned comparisons. Mean *EARNFY* judgments are higher for nonprofessional (4.97) than for professional (3.69) investors ($t(df = 188) = 4.72$; $p < 0.001$). Nonprofessional investors presented with graphical IDVs containing pro forma earnings information make higher *EARNFY* judgments (5.40) than those who were not provided graphical IDVs containing pro forma earnings information (4.52) ($t(df = 188) = 3.11$; $p = 0.002$).⁸ The presence of graphical IDVs containing pro forma earnings information does not significantly affect professional investors' fiscal year earnings judgments ($t(df = 188) = 0.69$; $p = 0.49$). Nonprofessional investors' *EARNPOT* judgments are marginally higher when they are provided with graphical IDVs containing pro forma earnings information (6.01) than when the graphical

⁷ Elliott (2006) reports these judgments as a composite measure. However, the Cronbach alpha coefficient for these two measures was only 0.60 for our entire sample. Therefore, we report separate analyses for *EARNFY* and *EARNPOT*.

⁸ The significance level for this result is $p = 0.03$ when including dropped participants in the sample.

IDVs did not contain pro forma earnings information (5.42) ($t(df = 188) = 1.83$; $p = 0.07$).⁹

Professional investors' *EARNPOT* judgments are also marginally higher when they are provided with graphical IDVs containing pro forma earnings information (5.85) than when the graphical IDVs did not contain pro forma earnings information (4.86) ($t(df = 188) = 1.74$; $p = 0.08$). The results strongly support H1 and are consistent with H2 for *EARNFY*. They marginally support H1, but are inconsistent with H2 for *EARNPOT*.¹⁰

Supplemental analysis: IDV viewing behavior

We performed additional analyses to determine whether nonprofessional investors spent more time examining graphical displays of financial information than professional investors. We compare nonprofessional and professional investors' viewing time on two measures: (1) the proportion of time spent examining graphical displays relative to total information viewing time and (2) the relative amount of time spent examining graphical displays of pro forma earnings information compared to total time spent examining graphical displays of earnings information. Time spent viewing graphical displays as a proportion of total information viewing time does not differ for professional (0.150) and nonprofessional (0.149) participants ($p = 0.99$). For participants provided with graphical displays of pro forma earnings information, the relative amount of time spent examining graphical displays of pro forma earnings information compared to total time spent examining graphical displays of earnings information (i.e., both pro forma and GAAP displays) is significantly higher for professional (0.609) than for nonprofessional (0.246)

⁹ This result is not significant ($p = 0.15$) when including dropped participants in the sample.

¹⁰ We also performed planned orthogonal comparisons for fourth quarter earnings judgments (*EARN4Q*), overall evaluation of the company's past earnings performance (*EARNOVER*), and judgments about whether to invest in the company (*INVEST*). None of the hypotheses tests are significant at conventional levels ($p < 0.10$) for these variables.

participants.¹¹ Thus, our results suggest that even though nonprofessional investors spend substantially less time viewing graphical pro forma relative to graphical GAAP earnings disclosures, the graphical pro forma disclosures still influence nonprofessional investors' earnings judgments to a greater extent than for professionals.

Supplemental analysis: textual information viewing data

Professionals' overall average total time acquiring information from the Investor Relations web site (858.10 seconds) is 9.9 percent higher than nonprofessional investors' (781.09 seconds) ($p < 0.001$). This suggests that professional investors employ a more complex information acquisition strategy than nonprofessionals. Table 3 presents information viewing data for each key component of the online Investor Relations materials as a proportion of total time spent viewing information. Nonprofessionals spend a greater proportion of time examining the overview and press release (0.582) than professionals (0.538) ($p = 0.03$). Professionals spend a greater proportion of time examining the income statement (0.190) than nonprofessionals (0.146) ($p = 0.01$), while nonprofessionals spend a greater proportion of time examining the balance sheet (0.070) than professionals (0.056) ($p = 0.028$).

Insert Table 3 about here.

Further, we find significant participant type by textual content interactions for the proportion of time spent on the overview and press release ($p = 0.04$) and on the income statement ($p = 0.02$). Panel A of Figure 5 displays the interaction for proportion of time spent on

¹¹ All professional participants provided with IDVs containing pro forma earnings information viewed them. However, six nonprofessional participants did not examine these IDVs. Since H1 is based on the assumption that nonprofessional investors will view graphical displays of pro forma earnings information, we ran a sensitivity analysis in which the six participants who did not view the IDVs containing pro forma earnings information were dropped from the sample. Results are substantively the same as reported in Table 2.

the overview and press release. The proportion of time spent by nonprofessional investors does not differ depending on whether textual disclosure content is GAAP-only (0.585) or pro forma reconciled to GAAP (0.580) ($p = 0.80$), but professionals provided with reconciled pro forma earnings disclosures spend a higher proportion of time examining the overview and press release (0.578) than those provided with GAAP-only earnings textual disclosures (0.502) ($p = 0.02$). Panel B of Figure 5 displays the interaction for proportion of time spent viewing the income statement. Nonprofessional investors spend a larger proportion of time examining the income statement when it contains reconciled pro forma (0.155) as opposed to GAAP-only earnings information (0.137), but this difference is not significant ($p = 0.15$). On the other hand, professionals provided with reconciled pro forma earnings disclosures spend a smaller proportion of time examining the income statement (0.168) than those provided with GAAP-only disclosures (0.209) ($p = 0.05$).

Insert Figure 5 about here.

These two interaction results are particularly interesting. One might expect that the proportion of time spent viewing the income statement would increase when comparing reconciled pro forma to GAAP-only financial statements, as the latter contains more lines of text. While nonprofessional investors behave consistently with this expectation, professional investors spend a *smaller* proportion of time examining reconciled pro forma income statements. Further, professional investors spend proportionately more time reading the information in the company overview and earnings press release when the textual materials disclose pro forma earnings, while inexperienced investors' proportionate time spent reading these materials is unaffected by textual disclosure content.

Summary, limitations, and discussion

This study examines the impact of graphical displays for pro forma earnings information on both professional and nonprofessional investors' judgments. As predicted, we find that nonprofessional investors' fiscal year earnings judgments are higher when viewing graphical IDVs containing pro forma as opposed to GAAP-only earnings information. Also as predicted, we find that professional investors' fiscal year earnings judgments are not different for participants viewing pro forma versus GAAP-only earnings graphical IDVs. Nonprofessional investors' earnings potential judgments are also marginally higher when viewing graphical IDVs. Unexpectedly, professionals' earnings potential judgments were also marginally higher when viewing graphical IDVs.

Analysis of information viewing behavior shows that nonprofessional participants spend the same proportion of time viewing graphical displays as professionals. This is inconsistent with information viewing data reported by Cardinaels (2008) and with the idea that tabular displays are a better fit for the analytical, directed information search strategies that more knowledgeable decision makers are more likely to apply. Further, the specific proportion of time professionals spend viewing pro forma relative to GAAP graphical earnings displays when both types of displays are present is greater than for nonprofessionals. Still, the presence of graphical IDVs containing pro forma earnings information does not appear to affect professional investors' earnings judgments, while the presence of these displays has a positive effect on nonprofessionals' earnings judgments. On the other hand, the presence of graphical IDVs affects earnings potential judgments for both investor groups. Therefore, the results suggest that nonprofessional investors place greater reliance on pro forma earnings information displayed in

graphs when evaluating current year earnings than do professionals. Further, this reliance occurs because the graphically displayed information is more salient to the nonprofessionals, even though they spend relatively less time examining these graphical displays than professional investors. At the same time, both groups of investors appear to rely on pro forma earnings information displayed in graphs when evaluating earnings potential.

Professionals' overall average total time acquiring information from the Investor Relations web site is higher than nonprofessional investors', suggesting that professional investors employ a more complex information acquisition strategy than nonprofessionals. We also find substantial differences across the two participant groups in textual information viewing behavior. Nonprofessional investors presented with textual earnings disclosures reconciled from pro forma to GAAP spend relatively more time viewing the income statement relative to other web site pages than do those presented with GAAP-only textual disclosures. This behavior may be driven by differences in the number of lines of text between the pro forma and GAAP income statement. However, professional investors spend proportionately *less* time viewing the income statement when it contains pro forma earnings reconciled to GAAP. At the same time, these professional investors spend relatively more time examining the earnings press release and company overview when the income statement presents pro forma earnings reconciled to GAAP. This is consistent with an information viewing strategy in which investors acquire information on nonrecurring items from the press release narrative, rather than from the reconciliation.

In this study, the press release and the pro forma-to-GAAP earnings reconciliation both contain the same information concerning nonrecurring items. The only difference is format—the reconciliation contained this information in a table (See Figure 1), while the press release contained the information in narrative format (See Figure 6). Prior to the adoption of SEC

Regulation G, viewing the press release narrative would be the only feasible way for an investor to acquire information on nonrecurring items if a company did not provide a pro forma-to-GAAP earnings reconciliation. Even though professionals reported a higher degree of familiarity with pro forma-to-GAAP earnings reconciliations than nonprofessional investors, our process data suggest that the nonprofessional investors appear to have relied more on the reconciliations in making their judgments, while professionals relied on the press release narrative. Even though information relevant to evaluating pro forma earnings was explicitly presented, professional investors appear to have acted as if the reconciling information was not presented, instead acquiring it directly from the press release narrative (cf. Vera-Munoz et al., 2001).

Insert Figure 6 about here.

One limitation of our study is that the sample size of professional investors (55) was substantially smaller than that for nonprofessional investors (146). The lack of a significant graphical IDV content effect for professionals' *EARNFY* judgments could be due to limited statistical power. The observed difference in *EARNFY* judgments between the pro forma and GAAP-only graphical IDV content conditions for professionals is 3.85 minus 3.54, or 0.31. If this is indeed a significant difference at the 0.05 level, the power of our statistical test to detect such a difference is only 0.25. However, a more reasonable standard might be to design the statistical test to detect a difference of 0.58 or greater, i.e., the same difference as observed between the two graphical IDV content conditions for nonprofessional investors. Given the standard deviation of professional earnings judgments (1.17), the sample size necessary to detect a 0.58 difference with 0.50 power and an alpha level of 0.10 (0.05) is 22 (31) in each graphical IDV content condition. Since we had 28 professional participants in the GAAP-only and 27 in

the pro forma graphical IDV content conditions, we believe that our professional investor sample size is adequate to detect at least a marginally significant IDV content effect for *EARNFY*.

We also acknowledge that our nonprofessional participants (i.e. early stage MBA students) are likely to have less investment experience than the MBA students used as nonprofessional investor proxies in other judgment studies involving pro forma earnings (Elliott, 2006, Frederickson & Miller, 2004). Only 50.4 percent of nonprofessional participants reported experience trading securities or mutual funds on their own account. Thus, future research may examine whether more experienced nonprofessional investors' judgments are affected by graphical displays of pro forma earnings information.

We examine only a case where adjusted pro forma earnings are greater than GAAP earnings, similar to other studies of the effects of pro forma earnings information on investor judgment (Elliott, 2006; Frederickson & Miller, 2004). Future research could investigate the effects of graphical displays when pro forma earnings are *less* than GAAP earnings. One might argue that graphical displays of pro forma information will be equally salient for nonprofessional investors, regardless of the relationship between GAAP and pro forma earnings. Alternately, when pro forma earnings are less than GAAP earnings, graphical displays of pro forma earnings may have less of an impact on nonprofessional investors' judgments due to framing effects.

We also examine only one type of graphical display of pro forma earnings information. The IDV displays used in this study were interactive since the user was able to select among graphical displays of pre-selected financial information, as in many of the interactive annual reports currently present on Investor Relations web sites (e.g., McDonalds, 2009). Other IDVs presently found on corporate Investor Relations web sites, such as Interactive Analyst (BP, 2009) allow users to effectively custom-design graphical displays, choosing information items, periods

to be displayed and graphical format. On the other hand, many online graphical displays of pro forma earnings information, such as those contained in pdf format copies of annual reports, continue to be static (e.g., Colgate, 2009). It remains to be seen whether the results found in this paper generalize to graphical displays with differing levels of interactivity.

Finally, the majority of participants completed the study in a lab setting. The lab setting may have affected participants' information search patterns. Our process data indicate that all except one nonprofessional participant examined one or more financial statements. In contrast, Hodge and Pronk (2006) report that only 40.6 percent of nonprofessional investors visited a corporate web site to evaluate the company as a new investment and only 54.5 percent of those who held it as a current investment examined one or more financial statements. Thus, the information viewing behavior of our nonprofessional participants may differ from that of actual nonprofessional investors.

We extend previous research by showing that nonprofessional investors' current fiscal year earnings evaluations are influenced by graphical displays of pro forma earnings information regardless of whether textual disclosures contain pro forma-to-GAAP reconciliations. Additionally, both professionals' and nonprofessionals' earnings potential evaluations are influenced by graphical displays of pro forma earnings information. However, nonprofessional investors do not spend more time viewing graphical displays of pro forma earnings information than professionals. Thus, it appears that nonprofessionals' current year earnings evaluations are influenced by graphical displays of pro forma earnings because the graphical displays are more salient to them than textual disclosures. On the other hand, it is not clear why graphical pro forma earnings disclosures did not influence professionals' current fiscal year earnings judgments, but did influence their earnings potential judgments. This suggests a need to further

investigate and compare the information processing strategies that nonprofessional and professional investors use to evaluate current year earnings performance and future earnings potential when graphical pro forma earnings disclosures are present.

We also extend previous research by showing that while textual disclosure of reconciled pro forma earnings does not appear to affect earnings evaluations, it does have differential effects on the manner in which nonprofessional and professional investors view financial information. Nonprofessional investors presented with textual disclosures of pro forma earnings reconciled to GAAP spend relatively more time examining the income statement than those presented with GAAP- only textual disclosures. In contrast, professional investors presented with textual pro forma earnings reconciled to GAAP, as opposed to GAAP-only textual disclosures, spend relatively less time examining the income statement and more time examining the press release, which presents details of the reconciling items. This suggests that even with the SEC reconciliation requirements, professional investors appear to concentrate on a company's press release narrative to obtain information about reconciling items.

The SEC (2008a) believes that advances in information technology coupled with the integral role that corporate web sites take in the dissemination of corporate information may help users obtain significant additional information. Further, the SEC states that the use of corporate web sites may enable investors to obtain information that is "at a level they believe is satisfactory for their purposes, without requiring them to wade through large amounts of written material that may provide a level of detail beyond their particular needs" (2008a, 81). However, the SEC has not yet formulated guidance on how to present financial information as technological advances facilitate emerging information presentation formats.

The recent XBRL mandate may increase the likelihood that companies will provide graphical IDVs containing pro forma information since companies that adopt XBRL for financial reporting purposes can elect to extend the standard taxonomy and create XBRL tags for their pro forma earnings information (Baldwin et al., 2006; SEC, 2008b, 2009). One intent of this mandate is to allow investors to acquire and process financial information easier and in a more user-friendly format. However, investors' own custom-designed displays of financial data may not conform to SEC disclosure requirements. In this study, we consider the specific possibility that investors using interactive IDV displays may be able to view pro forma earnings information without the appropriate reconciling information required by Regulation G. Our results indicate that the content of interactive graphical displays containing pro forma information may affect investors' judgments, even when textual reconciliations of pro forma-to-GAAP earnings are present. Thus, a technology intended to simplify investors' analysis of financial data may have the unintended effect of leading to biased financial judgments. This suggests that additional research addressing the effects of alternative display formats for pro forma financial information, as well as new guidance in this area by the SEC, is warranted.

References

- Ackerman, D. (1991). *A natural history of the senses*. New York NY: Random House.
- Allee, K.D., N. Battacharya, E.L. Black, & T.E. Christensen. (2007). Pro forma disclosure and investor sophistication: External validation of experimental evidence using archival data. *Accounting, Organizations and Society* 32 (April), 201-222.
- Alpert, B. (2001). Maybe pro-forma earnings aren't so bad after all. *Barron's* (August 6), 30.
- Baldwin, A.A., C.E. Brown, & B.S. Trinkle. (2006). XBRL: An impacts framework and research challenge. *Journal of Emerging Technologies in Accounting* 3, 97-116.
- Beattie, V.A., & M.J. Jones. 1997. A comparative study of the use of financial graphs in the corporate annual reports of major U.S. and U.K. companies. *Journal of International Financial Management and Accounting* 8 (1): 33-68.
- Beattie, V.A., & M.J. Jones. 2000. Changing graph use in corporate annual reports: A time-series analysis. *Contemporary Accounting Research* 17 (Summer): 13-226.
- Benbasat, I., & R.G. Schroeder. (1977). An experimental investigation of some MIS design variables. *MIS Quarterly* (March), 37-49.
- BP. (2009). Interactive analyst. Available at:
<http://www.bp.com/sectiongenericarticle.do?categoryId=2010244&contentId=2014606>.
- Buckless, F.A., & S.P. Ravenscroft. (1990). Contrast coding: A refinement of ANOVA in behavior analysis. *The Accounting Review* 65 (October), 933-945.
- Canadian Institute of Chartered Accountants (CICA). 1993. *Using ratios and graphics in financial reporting*. Toronto: CICA.
- Cardinaels, E. (2008). The interplay between cost accounting knowledge and presentation formats in cost-based decision-making. *Accounting, Organizations and Society* (33), 582-602.
- Colgate. (2009). Annual report. Available at :
<http://www.colgate.com/app/Colgate/US/Corp/Annual-Reports/2009/HomePage.cvsp>.
- David, C. (2001). Mythmaking in annual reports. *Journal of Business and Technical Communication* 15(2), 195-222.
- De Sanctis, G., & S. Jarvenpaa. (1989). Graphical presentation of accounting data for financial forecasting: An experimental investigation. *Accounting, Organizations and Society* 14 (5-6), 509-525.

- Dilla, W.N., & D.J. Janvrin. (2010). Voluntary disclosure in annual reports: The association between magnitude and direction of change in corporate financial performance and graph use. *Accounting Horizons*. Forthcoming.
- _____, _____, & R. Raschke. (2010). Interactive data visualization: New directions for accounting information systems research. Working paper, Iowa State University & University of Nevada – Las Vegas.
- Economist Intelligence Unit. (2003). Innovations in investor relations help rebuild public trust. Available at: www.enumerate.com.
- Elliott, W.B. (2006). Are investors influenced by pro forma emphasis and reconciliations in earnings announcements? *The Accounting Review* 81 (January), 113-134.
- _____, F. D. Hodge, J. J. Kennedy, & M. Pronk. (2007). Are M.B.A. students a good proxy for nonprofessional investors? *The Accounting Review* 82 (January), 139-168.
- Fiske, S.T., & S.E. Taylor. (1991). Social encoding: Attention and consciousness. In. *Social Cognition*, 2nd edition, 243-294. New York, NY: McGraw-Hill.
- Frederickson, J.R., & J.S. Miller. (2004). The effects of pro forma earnings disclosures on analysts' and nonprofessional investors' equity valuation judgments. *The Accounting Review* 79 (July), 667-686.
- Graves, O.F., D.L. Flesher, & R.E. Jordan. (1996). Pictures and the bottom line: The television epistemology of U.S. annual reports. *Accounting, Organizations and Society* 21 (January), 57-88.
- Hodge, F., J.J. Kennedy, & L.A. Maines. (2004). Does search-facilitating technology improve the transparency of financial reporting? *The Accounting Review* 79 (July), 687-703.
- _____, & M. Pronk. (2006). The impact of expertise and investment familiarity on investors' use of online financial report information. *Journal of Accounting, Auditing, and Finance* 21 (Summer), 267-292.
- Johnson, W.B., & W.C. Schwartz, Jr. (2005). Are investors misled by "pro forma" earnings? *Contemporary Accounting Research* 22 (Winter): 915-963.
- Kelton, A., and Y. Yang. (2008). The impact of corporate governance on Internet financial reporting. *Journal of Accounting and Public Policy* 27 (January/February): 62-87.
- Libby, R., R. Bloomfield, & M. W. Nelson. (2002). Experimental research in financial accounting. *Accounting, Organizations and Society* 27 (November), 775-810.
- McDonald's. (2009). 2009 Financial highlights. Available at: http://media.corporate-ir.net/media_files/irol/97/97876/2009_eCharts/mc_d.html.

- Securities & Exchange Commission (SEC). (2001). *ACTION: Cautionary advice regarding the use of "pro forma" financial information in earnings releases*. Release Nos. 33-8039, 34-45124, FR-59. Available at: <http://www.sec.gov/rules/other/33-8039.htm>.
- _____. (2003a). *Frequently asked questions regarding the use of non-GAAP financial measures*. Available at: <http://www.sec.gov/divisions/corpfin/faqs/nongaapfaq.htm>.
- _____. (2003b). *Final rule: Conditions for use of pro forma financial measures*. Release Nos. 33-8176; 34-47226; FR-65. January 22. Washington, D.C.: Government Printing Office.
- _____. (2008a). *Final report of the advisory committee on improvements to financial reporting*. August 1. Available at: <http://www.sec.gov/about/offices/oca/acifr/acifr-finalreport.pdf>.
- _____. (2008b). *SEC approves interactive data for financial reporting by public companies, mutual funds*. Available at: <http://www.sec.gov/news/press/2008/2008-300.htm>.
- _____. (2009). *Interactive data to improve financial reporting*. Available at: <http://www.sec.gov/rules/final/2009/33-9002.pdf>.
- Steinbart, P.J. 1989. The auditor's responsibility for the accuracy of graphs in annual reports: Some evidence of the need for additional guidelines. *Accounting Horizons* 3 (September): 60-70.
- Taylor, S.E., & S.T. Fiske. (1978). Salience attention, and top of the head phenomena. *Advances in Social Psychology* 11, 249-288.
- Thomson Financial. (2007). Best practices in web disclosure. Available at: http://www.ccbn.com/_pdfs/bestpractices/best%20practices_web_dis.pdf.
- Twarowski, C. (2008). Financial data on 'steroids'. *Washington Post* August 19.
- Vera-Munoz, S.C., W.R. Kinney, & S.E. Bonner. (2001). The effects of domain experience and task presentation format on accountants' information relevance assurance. *Accounting Review* 76 (July), 405-429.
- Vessey, I. (1991). Cognitive fit: A theory based analysis of the graphs versus tables literature. *Decision Sciences* 22 (Spring), 219-241.
- _____, & D. Galletta. (1991). Cognitive fit: An empirical study of information acquisition. *Information Systems Research* 2 (March), 63-84.
- Wallsten, T.S. (1980). Processes and models to describe choice and inference. In *Cognitive Processes in Choice and Decision Behavior*, edited by T.S. Wallsten. Hillsdale NJ: Erlbaum Associates.

Ware, C. (2004). *Information visualization: perception for design*. 2nd edition. San Francisco CA: Morgan Kaufman.

Table 1

Descriptive statistics for earnings judgments.

Panel A: Fiscal year earnings (EARNFY)

Nonprofessional investors		Graphical IDV content		
Textual disclosure content GAAP-only			Includes	
		<u>GAAP-only</u>	<u>pro forma</u>	<u>Total</u>
	Mean	4.45	5.32	4.91
	(n)	(33)	(37)	(70)
	[Std. Dev.]	[1.70]	[1.84]	[1.82]
Pro forma reconciled	Mean	4.58	5.49	5.03
	(n)	(36)	(35)	(71)
	[Std. Dev.]	[1.92]	[1.88]	[1.94]
Total	Mean	4.52	5.40	4.97
	(n)	(69)	(72)	(141)
	[Std. Dev.]	[1.80]	[1.85]	[1.87]
Professional investors		Graphical IDV content		
Textual disclosure content GAAP-only			Includes	
		<u>GAAP-only</u>	<u>pro forma</u>	<u>Total</u>
	Mean	3.53	3.86	3.69
	(n)	(15)	(14)	(29)
	[Std. Dev.]	[0.92]	[1.70]	[1.34]
Pro forma reconciled	Mean	3.54	3.85	3.69
	(n)	(13)	(13)	(26)
	[Std. Dev.]	[1.05]	[0.90]	[0.97]
Total	Mean	3.54	3.85	3.69
	(n)	(28)	(27)	(55)
	[Std. Dev.]	[0.96]	[1.35]	[1.17]

Table 1 (continued)

Descriptive statistics for earnings judgments.

Panel B: Earnings potential (EARNPOT)

Nonprofessional investors

		Graphical IDV content		
			Includes	
		<u>GAAP-only</u>	<u>pro forma</u>	<u>Total</u>
Textual disclosure content GAAP-only	Mean	5.64	6.14	5.90
	(n)	(33)	(37)	(70)
	[Std. Dev.]	[1.78]	[2.14]	[1.98]
Pro forma reconciled	Mean	5.22	5.89	5.55
	(n)	(36)	(35)	(71)
	[Std. Dev.]	[1.99]	[1.69]	[1.87]
Total	Mean	5.42	6.01	5.72
	(n)	(69)	(72)	(141)
	[Std. Dev.]	[1.89]	[1.93]	[1.92]

Professional investors

		Graphical IDV content		
			Includes	
		<u>GAAP-only</u>	<u>pro forma</u>	<u>Total</u>
Textual disclosure content GAAP-only	Mean	5.00	5.93	5.45
	(n)	(15)	(14)	(29)
	[Std. Dev.]	[1.20]	[1.82]	[1.34]
Pro forma reconciled	Mean	4.92	5.77	5.35
	(n)	(13)	(13)	(26)
	[Std. Dev.]	[2.53]	[1.48]	[0.97]
Total	Mean	4.96	5.85	5.40
	(n)	(28)	(27)	(55)
	[Std. Dev.]	[1.90]	[1.63]	[1.81]

Table 2

Planned comparison results.

	<i>EARNFY</i>		<i>EARNPOT</i>	
	t (df = 188)	p-value	t (df = 188)	p-value
Nonprofessional vs. professional investors	4.72	<0.001	1.05	0.30
Comparisons within nonprofessional investors				
Textual disclosure	0.51	0.61	-1.04	0.30
Graphical IDV content	3.11	0.002	1.83	0.07
Textual disclosure x graphical IDV content	0.06	0.95	0.26	0.80
Comparisons within professionals investors				
Textual disclosure	-0.01	0.99	-0.23	0.82
Graphical IDV content	0.69	0.49	1.74	0.08
Textual disclosure x graphical IDV content	-0.02	0.99	-0.08	0.94
Model summary statistics				
	F (7, 188)	p-value	F (7, 188)	p-value
	4.73	<0.001	1.27	0.26

Table 3
Information viewing data.

Item	<u>Proportion of total time spent</u>	
	<u>Nonprofessional investors</u>	<u>Professional investors</u>
Overview and press release	0.582	0.538 ¹
Income statement	0.146	0.190 ²
Balance sheet	0.070	0.056 ¹
All textual material	0.849	0.850

Notes

¹ Professional and nonprofessional investors' means are different at $p < 0.05$ level.

² Professional and nonprofessional investors' means are different at $p < 0.01$ level.

Figure 1

Overview of company operations:
GAAP-only graphical IDV content condition.

Investor Relations

Welcome to the Investor Relations website of Drugs R Us Corporation, offering you the latest financial information in an easy, user-friendly format. Celebrating more than 40 years of dynamic growth in the pharmacy retail industry, Drugs R Us Corporation is committed to customer satisfaction and to providing a positive shopping experience in our stores and on our web site.

Drugs R Us has created innovative approaches to serve the health care needs of all customers through nearly 4,200 stores, its online pharmacy, and its pharmacy benefit management and specialty pharmacy subsidiary. The pharmacy industry has some of the best long-term growth dynamics in all of retail, and Drugs R Us is extremely well positioned to seize further growth opportunities.

The Investor Relations website contains our latest earnings press release, most recent financial statements, and an interactive financial history. You may access these materials by clicking on the menu on the right hand side of each page. After you have viewed this information, click on **Enter Responses** to record your judgments.

- Overview
- Earnings Press Release
- Financial Statements
 - Income Statements
 - Balance Sheets
 - Cash Flow Statements
- Interactive Financial History
 - Income Statements
 - Sales and Gross Margin
 - Operating Profit and Net Earnings
 - Diluted Earnings per Share
 - Balance Sheets
 - Current Assets and Current Liabilities
 - Current Assets by Account
 - Total Assets and Total Liabilities
 - Total Liabilities and Stockholders' Equity
 - Cash Flows
 - Cash Flows from Operations and Operating Profit
 - Cash Flows by Category
- Enter Responses

Figure 2
Sample graphical interactive data view:
Includes pro forma graphical IDV content condition.

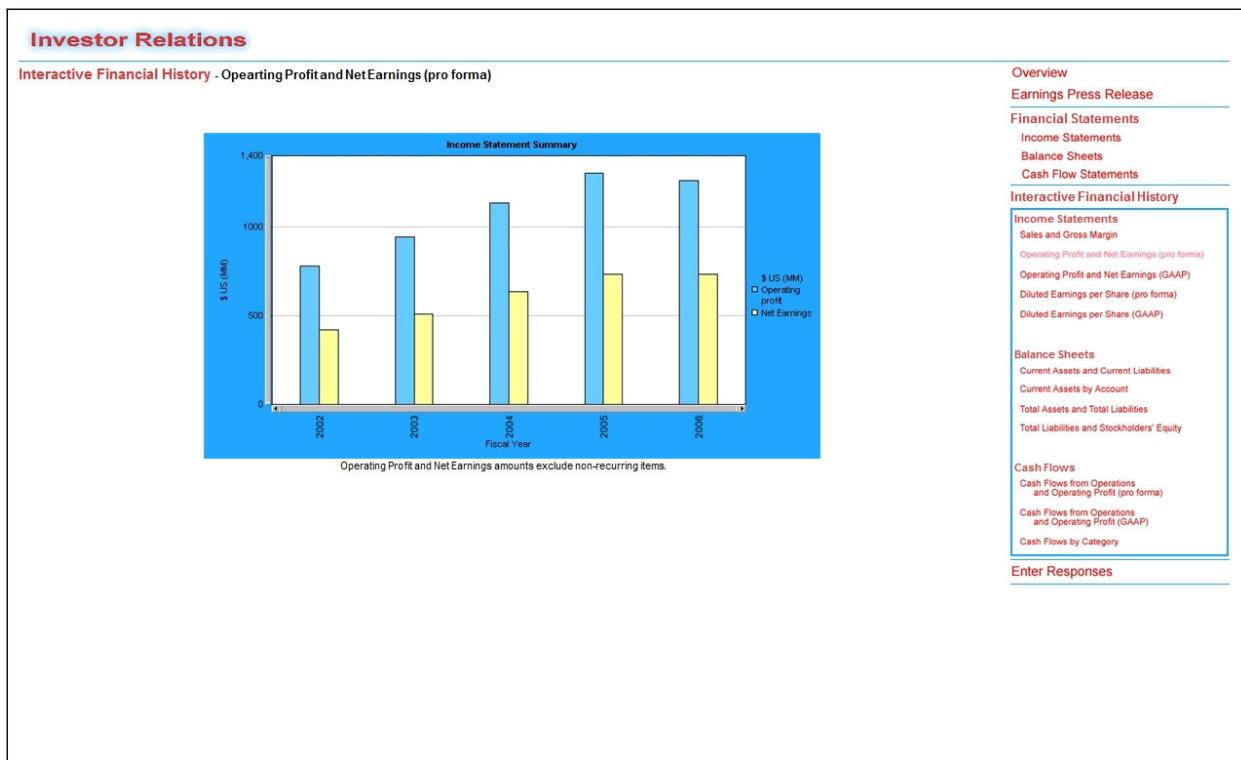


Figure 3
Experimental design.

Nonprofessional investors		
	Graphical IDV content	
Textual disclosure content	GAAP-only	Includes pro forma
GAAP-only	Cell A	Cell B
Pro forma reconciled	Cell C	Cell D

Professional investors		
	Graphical IDV content	
Textual disclosure content	GAAP-only	Includes pro forma
GAAP-only	Cell E	Cell F
Pro forma reconciled	Cell G	Cell H

Figure 4

Pro forma income statements with reconciliation.

Income Statements**DRUGS R US CORPORATION****Consolidated Pro forma Income Statements**

(Unaudited)

In millions, except per share amounts	13 Weeks Ended		52 Weeks Ended	
	December 29, 2006	December 30, 2005	December 29, 2006	December 30, 2005
Net sales	\$5,950.5	\$5,488.8	\$22,241.4	\$20,087.5
Cost of goods sold, buying and warehousing costs	4,537.4	4,060.3	16,544.7	14,725.8
Gross margin	1,413.1	1,428.5	5,696.7	5,361.7
Selling, general and administrative expenses	1,015.8	982.9	4,116.3	3,761.6
Depreciation and amortization	81.3	76.4	320.8	296.6
Total operating expenses	1,097.1	1,059.3	4,437.1	4,058.2
Operating profit before non-recurring items	316.0	369.2	1,259.6	1,303.5
Interest expense, net	14.1	20.1	61.0	79.3
Earnings before income tax provision	301.9	349.1	1,198.6	1,224.2
Income tax provision	113.7	139.6	467.0	489.7
Net (loss) earnings from recurring items (1) (2)	188.2	209.5	731.6	734.5
Diluted earnings per common share before non-recurring items (1)(2)	\$ 0.48	\$ 0.51	\$ 1.79	\$ 1.80
Weighted average diluted common shares outstanding	390.8	409.8	408.3	408.0
Dividends declared per common share	\$ 0.0575	\$ 0.0575	\$ 0.2300	\$ 0.2300

Figure continues on next page.

Figure 4 (continued)

Pro forma income statements with reconciliation.

Reconciliation of Pro Forma Items Required by SEC Rules

A reconciliation of pro forma net income before recurring items with the Company's net income determined under GAAP is presented in the following table.

In millions, except per share amounts	13 Weeks Ended		52 Weeks Ended	
	December 29, 2006	December 30, 2005	December 29, 2006	December 30, 2005
Net earnings (loss) from recurring items	\$188.2	\$209.5	\$731.6	\$734.5
Non-recurring items net of tax benefit				
Restructuring and asset impairment costs (1)	318.4		318.4	
Partial payment of settlement proceeds in class action lawsuit (2)				(11.5)
Net earnings (loss) GAAP basis	\$(130.2)	\$209.5	\$413.2	\$746.0
Diluted earnings (loss) per common share before non-recurring items	\$ 0.48	\$ 0.51	\$ 1.79	\$ 1.80
Non-recurring costs (gains) net of tax benefit	0.82		0.78	(0.03)
Diluted earnings (loss) per common share after non-recurring items	\$ (0.34)	\$ 0.51	\$ 1.01	\$ 1.83
Weighted average diluted common shares outstanding	390.8	409.8	408.3	408.0
Dividends declared per common share	\$ 0.0575	\$ 0.0575	\$ 0.2300	\$ 0.2300

(1) During the fourth quarter of 2006, the Company recorded a \$489.0 million (\$318.4 million after-tax) charge for restructuring and asset impairment costs. The charge is comprised of \$5.7 million recorded in cost of goods sold and \$483.3 million recorded in total operating expenses. The total effect of the nonrecurring items has an impact on diluted earnings per share of \$0.81 in the fourth quarter and \$0.78 for the year.

(2) The 52 weeks ended December 30, 2005 include a \$19.2 million (\$11.5 million after-tax), or \$0.03 per diluted share, nonrecurring gain in total operating expenses representing partial payment of the Company's share of the settlement proceeds from a class action lawsuit against manufacturers of brand name prescription drugs.

Figure 5

Participant type by graphical IDV content interactions:
Information viewing data.

Panel A: Proportion of time viewing income statement

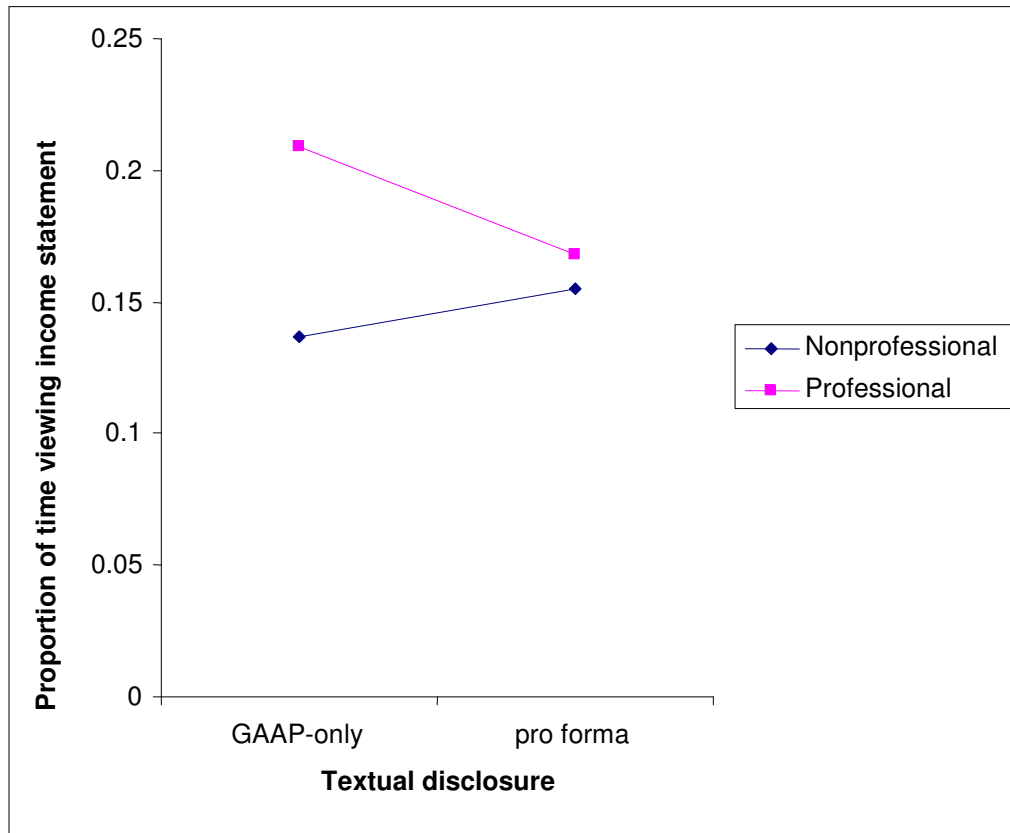


Figure 5 (continued)

Participant type by graphical IDV content interactions:
Information viewing data.

Panel B: Proportion of time viewing company overview and press release

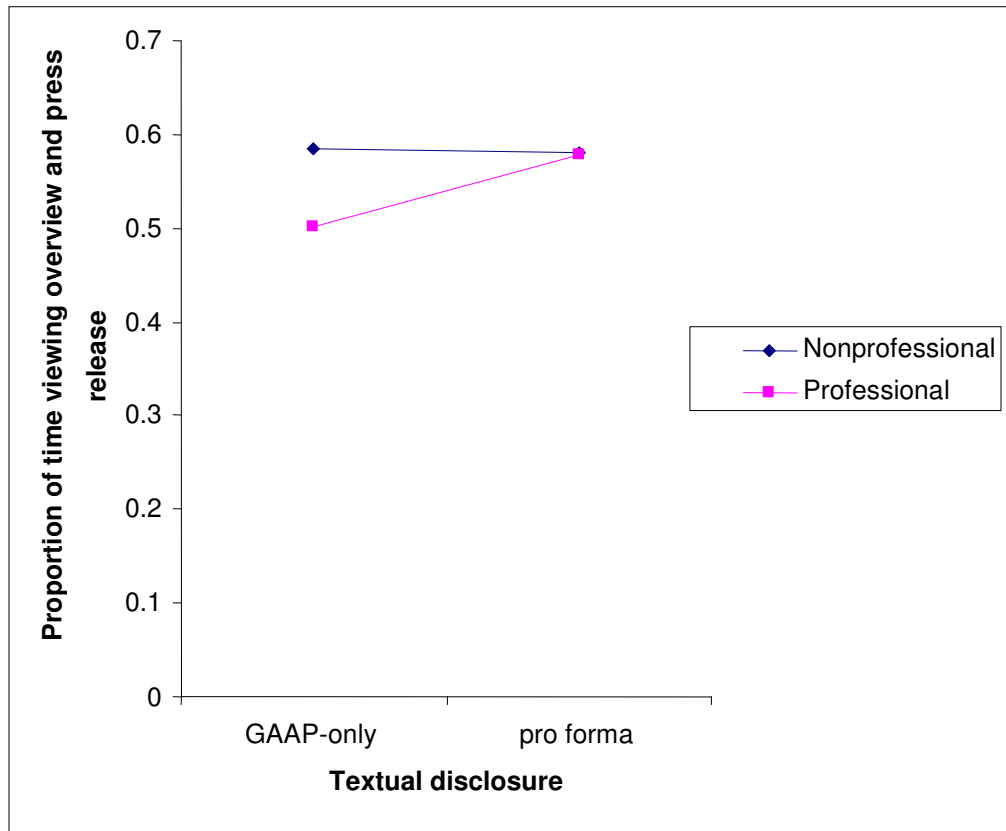


Figure 6

Press release excerpt: Non-recurring items disclosure.

Non-Recurring Items

During the fourth quarter of 2006, the Company recorded a \$489.0 million (\$318.4 million after-tax) nonrecurring charge for restructuring and asset impairment costs associated with a comprehensive plan designed to streamline operations and enhance operating efficiencies. The major components of the plan are as follows:

- Closing 229 stores;
- Closing the Columbus, Ohio mail order facility;
- Closing the Henderson, North Carolina distribution center;
- Closing two satellite office facilities; and
- Staff reductions related to these closings and other streamlining initiatives.

2005 results benefited from a \$19.2 million (\$11.5 million after-tax) nonrecurring gain from settlement proceeds received in the third quarter from a class action lawsuit against certain manufacturers of brand name prescription drugs.
