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Pro Forma Accounting Reconciliation Disclosures: The Effect of Financial Reporting Knowledge and Information Viewing Behavior on Judgments of Nonprofessional Investors

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Pro Forma Accounting Disclosures: The Effects of Reconciliations and Financial Reporting Knowledge on Nonprofessional Investors' Judgments

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Brief Abstract:

This study extends prior research by examining the extent to which financial reporting knowledge and information viewing behavior affect the influence of reconciled non-GAAP, or “pro forma” earnings disclosures on nonprofessional investors’ judgments. We find that the effects of pro forma earnings information on participants’ judgments differ, depending on their level of financial reporting knowledge and the amount of time they spent viewing the earnings reconciliation relative to other earnings information. Our results suggest that the effectiveness of financial reporting regulation may be dependent on characteristics of the general investing public that vary across investors. Regulators and standard setters need to be aware of the possible differential effects of financial reporting knowledge and investor type as they consider non-GAAP earnings reporting requirements.

Keywords: pro forma earnings, nonprofessional investors, Regulation G, information presentation

Pro Forma Accounting Reconciliation Disclosures: The Effect of Financial Reporting Knowledge and Information Viewing Behavior on Judgments of Nonprofessional Investors

1. Introduction

Companies often present non-GAAP, or “pro forma” accounting information in their earnings press releases. To calculate pro forma earnings, management adjusts GAAP earnings for items deemed transitory or non-representative of future cash flows. However, the Securities and Exchange Commission (SEC) has raised concerns about the potential for pro forma information to mislead investors (SEC 2001). Specifically, while the SEC acknowledges that pro forma information can serve useful purposes (SEC 2001), they question whether the use of pro forma metrics confuses investors and makes comparisons between reporting periods and between companies difficult. Congress addressed this concern in Section 401 of the Sarbanes-Oxley Act (U.S. House of Representatives 2002), which directed the SEC to develop regulation to reduce or eliminate pro forma earnings disclosures which might be misleading (Entwistle, Feltham, and Mbagwu 2006). The SEC responded by issuing Regulation G (SEC 2003) which establishes disclosure rules for reconciling pro forma information to the relevant GAAP measures. Subsequent experimental (Elliott 2006) and archival (Allee, Battacharya, Black, and Christensen 2007) research suggests that reconciling pro forma to GAAP earnings disclosures reduces the influence of pro forma information on nonprofessional investors’ judgments.

While the intent of Regulation G was to improve the disclosure of pro forma earnings to nonprofessional investors, this class of investors is a large, heterogeneous group (Elliott, Hodge, and Jackson 2008). In 2008, over 54 million Americans owned equities and/or bonds, in part due to the increase in self-managed defined contribution retirement plans since these were first widely offered in the 1980’s (Mincer 2006; Investment Company Institute 2008). Differences

among nonprofessional investors' levels of financial reporting knowledge are significant and may affect how they acquire and integrate financial statement information (Elliott, Hodge, Kennedy, and Pronk 2007; Elliott et al. 2008). While nonprofessional investors are a heterogeneous group, financial judgment research (e.g., Maines and McDaniel 2000; Hirst, Jackson, and Koonce 2003; Hodge, Kennedy, and Maines 2004) typically treats nonprofessional investors as a homogeneous group. Standard setters suggest that accounting information should be useful for "those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence" (FASB 1978, Concept Statement 1, para. 34). However, research that examines the effects of individual differences among nonprofessional investors and the impact of these differences on their judgments is limited (Elliott et al. 2008).

Previous studies suggest that pro forma disclosures on average influence nonprofessional investors' judgments through unintentional cognitive effects (Frederickson and Miller 2004; Elliott 2006). Elliott (2006) finds that GAAP-to-pro forma earnings reconciliations appear to reduce the influence of pro forma information on nonprofessional investors' judgments by explicitly displaying the differences between the two earnings measures. Similar to the financial judgment research mentioned above, both of these studies treat nonprofessional investors as a homogeneous group. They do not explore whether financial reporting knowledge differences among nonprofessional investors affect the processing of pro forma information and its influence on judgments.

We extend previous research into the effects of pro forma earnings disclosures and reconciliations on nonprofessional investor judgments in two ways. First, we examine the whether pro forma earnings information has differential effects on the judgments of

nonprofessional investors with varying levels of financial reporting knowledge. Previous research (e.g., Bonner and Lewis 1990; Bonner and Pennington 1991) suggests that knowledge is a critical determinant of accounting-related judgments and that nonprofessional investors vary considerably in their financial reporting knowledge levels (Elliott et al. 2007). Since making earnings evaluation and investment judgments in the presence of pro forma information is a task with relatively low integrative complexity (Elliott et al. 2007), we predict that the influence of pro forma information on the judgments of nonprofessional investors with higher levels of financial reporting knowledge (i.e., high-knowledge nonprofessional investors) will be similar to that on professional investors' judgments. At the same time, the influence of pro forma information on the judgments of nonprofessional investors with lower levels of financial reporting knowledge (i.e., low-knowledge nonprofessional investors) will be similar to that observed in previous research (Frederickson and Miller 2004; Elliott 2006).

Second, we examine the interactive effects of nonprofessional investors' financial reporting knowledge and reconciliation viewing behavior on their judgments. Underlying Elliott's (2006) finding that earnings reconciliations appear to reduce the influence of pro forma information on nonprofessional investors' judgments is an assumption that these investors acquire the reconciling information, presumably by viewing the reconciliation. We propose that high-knowledge nonprofessional investors will acquire the reconciling information either by viewing the "repackaged" information in the reconciliation or by examining the disclosure of non-recurring items adjustments in other sections of the earnings press release (cf. Vera-Munoz, Kinney, and Bonner 2001). At the same time, low-knowledge nonprofessional investors are more likely to acquire the reconciling items by viewing the reconciliation. Thus, the influence of pro forma earnings disclosures on low-knowledge nonprofessional investors' judgments will vary,

depending on the relative amount of time they spend viewing the earnings reconciliation relative to other earnings information. At the same time, the influence of pro forma earnings disclosures on high-knowledge nonprofessional investors' judgments will not depend on the relative amount of time they spend viewing the reconciliation relative to other earnings information.

We conducted an experiment to examine the impact of pro forma earnings disclosures on nonprofessional investors' judgments. We assessed participants' financial reporting knowledge using an instrument similar to that used by Elliott et al. (2007). Participants viewed a simulated Investor Relations web site for a large drug retailer. The web site included an earnings press release and accompanying financial statements that contained either GAAP-only earnings information or pro forma and GAAP earnings information. Participants in the pro forma disclosure condition were able to access an earnings reconciliation by clicking on a hyperlink. Non-recurring items caused the most recently quarterly and annual pro forma income to be higher than GAAP income. Participants made a set of judgments about the company's earnings performance and desirability as an investment.

Results indicate that the effects of pro forma earnings information on nonprofessional investors' earnings performance evaluations are influenced both by their assessed level of financial reporting knowledge and by their information viewing behavior. Low-knowledge participants in the pro forma disclosure condition who spent relatively less time viewing the earnings reconciliation had significantly higher earnings performance and investment desirability judgments than low-knowledge participants who were provided with GAAP-only earnings information. At the same time, the earnings and investment judgments of low-knowledge participants given pro forma earnings disclosures who spent relatively more time viewing the reconciliation were lower than those of low-knowledge participants who spent less time viewing

the reconciliation. Further, the earnings and investment judgments of high-knowledge participants given pro forma earnings information: (1) did not differ from those of similar participants given GAAP-only information and (2) did not differ according to time spent viewing the reconciliation. A supplemental analysis of information viewing behavior suggests that the latter result may be due in part to the finding that high-knowledge participants who spent relatively less time viewing reconciling information spent more time examining the pro forma income statement and its footnote disclosures of reconciling items.

Our results indicate that the effects of earnings reconciling information on nonprofessional investor judgments demonstrated by earlier studies (Elliott 2006) are contingent on both financial reporting knowledge level and information viewing behavior. This suggests that the effectiveness of Regulation G in reducing the impact of potentially misleading pro forma disclosures may depend on the financial reporting knowledge level and information viewing behavior of nonprofessional investors. Regulators and standard setters need to be aware of possible differential impacts contingent on financial reporting knowledge levels and investor types as they mandate reporting requirements for the disclosure of non-GAAP earnings measures.

2. Background and Hypotheses

Companies often present earnings and results of operations based on methodologies other than Generally Accepted Accounting Principles (GAAP). This presentation is commonly referred to as “pro forma” financial information (Alpert 2001; Johnson and Schwartz 2005). The term is used to refer to any presentation where items selected by management have been omitted from GAAP earnings. However, the SEC notes (SEC 2001) that in this usage the measure of pro

forma earnings is not uniformly defined, nor does it represent any uniform characteristic of financial information. Proponents claim that pro forma numbers are more relevant than GAAP earnings because GAAP reporting requires inclusion of certain nonrecurring items. They argue that because of their nonrecurring nature, these items should not be used to evaluate future economic performance or to predict future cash flows. Research examining market reactions to the release of pro forma and GAAP earnings is inconclusive. Bhattacharya, Black, Christensen, and Larson (2003) find that pro forma earnings are more informative than GAAP earnings. In contrast, Johnson and Schwartz (2005) find no evidence of a stock return premium for pro forma firms at the quarterly earnings announcement date (2005).

Impact of Pro Forma Earnings Disclosures on Individual Investor Judgments

Experimental research has also examined the impact of pro forma and GAAP earnings numbers on individual investor decisions (Frederickson and Miller 2004; Elliott 2006). Frederickson and Miller (2004) find that nonprofessional investors who reviewed earnings announcements including pro forma figures that are greater than GAAP earnings assessed a higher stock price than did those who examined an announcement containing only GAAP disclosures. At the same time, the presence of pro forma earnings disclosures did not affect the stock price judgments of professional investors. Supplemental analyses suggest that pro forma earnings disclosures influence nonprofessionals' judgments because of unintentional cognitive effects, rather than nonprofessionals perceiving the supplemental disclosures as informative. Further, professional investors' judgments are not affected by pro forma earnings disclosures because they appear to use well-defined valuation models that reflect an understanding of the relative importance of various pieces of financial information. Similarly, Elliott (2006)'s results indicate that the earnings performance judgments of nonprofessional investors are higher when

viewing unreconciled pro forma earnings disclosures than when viewing GAAP-only disclosures. Analysts' earnings performance judgments, however, do not appear to be significantly different whether they view unreconciled pro forma or GAAP-only earnings disclosures.

Both Frederickson and Miller (2004) and Elliott (2006) treat nonprofessional investors as a homogeneous group. However, there are variations in financial reporting knowledge and experience among nonprofessional investors (Elliott et al. 2007; Elliott et al. 2008). Therefore, while nonprofessional investors *on average* appear to be influenced by pro forma earnings information, this may not necessarily be true for all individuals within this group.

Investors' ability to properly understand and utilize the various pieces of information contained in an earnings disclosure is in part a function of their knowledge of financial reporting as broadly defined by Elliott et al. (2007). This knowledge can be obtained through formal education, such as reading textbooks and articles on investing and completing financial analysis case studies. It can also be obtained through experience by feedback from one's investing decisions (Bonner and Lewis 1990; Bonner and Pennington 1991; Libby and Luft 1993).

Elliott et al. (2007) classify making earnings potential and investment judgments in the presence of pro forma information as a task with relatively low integrative complexity. Such a task requires a certain level of financial reporting knowledge for an investor to evaluate financial information contained in an earnings disclosure that includes pro forma metrics and integrate it into one's judgments. It does not, however, require making complex connections or comparisons among a set of information.¹ Consistent with Elliott et al. (2007), we contend that this level of knowledge can be obtained through either formal education or investment experience. Further,

¹ In contrast, Elliott et al. (2007) suggests that comparing financial statements of two companies, one disclosing stock option compensation in footnotes and the other in the income statement, is a task with a high degree of integrative complexity.

we assert that nonprofessional investors with higher levels of financial reporting knowledge are likely to have obtained an understanding of the relative importance of various pieces of financial information similar to that of professional investor participants in previous judgment studies of the effects of pro forma earnings information (e.g. Frederickson and Miller 2004; Elliott 2006).

Specifically, we expect that pro forma earnings information will have less influence on the judgments of nonprofessional investors with higher levels of financial reporting knowledge (i.e., high-knowledge nonprofessional investors), and greater influence on the judgments of those with lower levels of financial reporting knowledge (i.e., low-knowledge nonprofessional investors). This leads to the following hypothesis.

H1: The presence of pro forma earnings disclosures will have a larger influence on the judgments of low-knowledge nonprofessional investors than on the judgments of high-knowledge nonprofessional investors.

Viewing Reconciliation Information

Elliott (2006) finds that when pro forma earnings are disclosed, the presence of an earnings reconciliation reduces the effect of pro forma earnings disclosures on nonprofessional investors' judgments. This suggests that the presence of an earnings reconciliation makes it easier for nonprofessional investors to integrate information on the relationship between GAAP and pro forma earnings measures. However, in order for nonprofessional investors to integrate and use this information, they must first view and acquire it (Maines and McDaniel 2000).

We argue that the influence of information presented in the earnings reconciliation on nonprofessional investors' judgments will depend on their level of financial reporting knowledge and their information viewing behavior. Elliott's (2006) findings suggest that low-knowledge nonprofessional investors are more likely to acquire information on the differences between GAAP and pro forma earnings measures from the reconciliation than from other sections of an

earnings press release (i.e., a narrative or the pro forma income statement). Therefore, low-knowledge nonprofessional investors who spend less time viewing the reconciliation relative to other earnings disclosures (i.e., a pro forma income statement) will be influenced by pro forma earnings information to a greater extent than those who spend relatively more time viewing the reconciliation.

On the other hand, high-knowledge nonprofessional investors may be able to acquire and integrate relevant information on the differences between GAAP and pro forma earnings from either the reconciliation or other sections of the earnings press release. Vera-Munoz, Kinney, and Bonner (2001) show that experienced accountants are able to acquire and integrate relevant accounting information into their judgments regardless of presentation format. In the context of pro forma earnings disclosures, findings that professional investors' judgments are not influenced by pro forma earnings information (Frederickson and Miller 2004; Elliott 2006) also suggest that individuals with high levels of financial reporting knowledge are able to acquire and integrate information related to differences between GAAP and pro forma earnings measures even when a reconciliation is not present. Further, Dilla, Janvrin, and Jeffrey (2010) find evidence suggesting that professional investors given pro forma earnings information spend relatively more time viewing information on reconciling items from the narrative section of a press release than from the earnings reconciliation. Since the task of making earnings potential and investment judgments in the presence of pro forma earnings disclosures has relatively low integrative complexity, it appears likely that high-knowledge nonprofessional investors would be able to acquire and integrate relevant information for their judgments from either the reconciliation or other parts of the press release. Thus, the presence of pro forma earnings information is expected to have a similar influence on high-knowledge nonprofessional

investors' judgments regardless of the amount of time they spend viewing the reconciliation as opposed to other earnings information. This leads to the following hypotheses:

H2: The presence of pro forma earnings disclosures will have a *smaller* influence on the judgments of low-knowledge nonprofessional investors who spend relatively *more* time viewing an earnings reconciliation than on the judgments of low-knowledge nonprofessional investors who spend relatively less time viewing the earnings reconciliation.

H3: The presence of pro forma earnings disclosures will have a similar influence on the judgments of high-knowledge nonprofessional investors, regardless of the relative amount of time spent viewing the earnings reconciliation.

3. Method

Task and Design

Participants viewed online financial information for a hypothetical company called Drugs R Us (DRU). The information was based on the Investor Relations web site of a large retailer of pharmaceutical products and other health care items. The company was chosen as a model for our experimental materials because it previously reported pro forma earnings and included this material on its Investor Relations web site. The materials were pilot tested with 16 Masters-level business students who suggested several minor screen display changes.

Participants first completed a financial reporting knowledge quiz that contained 11 questions designed to assess their general accounting and reporting knowledge and three questions which addressed specific pro forma reporting issues.² Then, they read a brief introduction to the experimental task and navigated to a page that displayed an overview of DRU's operations (see Figure 1). From this page, participants could navigate to DRU's most recent earnings press release or to their financial statements. The press release and financial

² The quiz was adapted from the financial literacy quiz used by Elliott et al. (2007). We pilot-tested the quiz with upper level undergraduate and graduate accounting students. Based on the pilot test results, we made several minor wording changes to the quiz questions.

statements contained information on DRU's fourth quarter and annual financial performance results for the current and previous year. After reviewing financial information on DRU, participants responded to a set of questions concerning the company's earnings performance. They evaluated earnings performance by responding to questions on 11-point scales ranging from Very Weak (0) to Very Strong (10). After confirming their responses, participants then completed a second questionnaire that gathered demographic data and experience with investing and financial statement analysis. The experimental software generated a log for each participant, recording the order of pages visited and how much time was spent on each page.

Insert Figure 1 about here.

The experiment used a 2 by 2 between-participants design. We manipulated one independent variable, disclosure content, as GAAP-only or containing pro forma earnings information. We measured the second independent variable, financial reporting knowledge, based on participants' financial reporting knowledge quiz scores. Press release and income statement content varied across disclosure conditions. Participants in the GAAP-only 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 pro forma disclosure condition presented earnings excluding non-recurring items, followed by a discussion of the non-recurring items. The income statement in this condition presented pro forma fourth quarter and annual earnings (loss) and diluted earnings per common share that excluded non-recurring items. It included footnotes describing non-recurring items. Participants were able to navigate to sequential reconciliations of pro forma earnings and earnings per share to the corresponding GAAP amounts by clicking a hyperlink (see Figure 2).

Insert Figure 2 about here.

Press Release

The earnings press release was patterned after an actual earnings announcement for the company on which the experimental materials were based. The first part of the narrative gave comparative sales information; this section was the same across experimental conditions. The second part stated current and comparative amounts for fourth quarter and annual earnings. This section presented either GAAP or pro forma earnings, depending on the experimental condition. Consistent with the company disclosures used to develop the experimental materials, pro forma earnings were labeled as earnings excluding non-recurring items. The third part of the narrative 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 and Miller 2004; Elliott 2006), the current quarter and year pro forma earnings were greater than GAAP earnings. Drugs R Us reported a fourth quarter 2007 GAAP loss of (\$0.34) per share and a pro forma profit of \$0.48 per share. For the 2007 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 2). The final section of the earnings release presented summary information regarding changes in the company's operations. This section was also identical across experimental conditions.

Participants and Procedure

A total of 441 nonprofessional investors participated in the study. Two hundred and thirty-three were students enrolled in either an undergraduate auditing class or a masters'-level accounting theory course at a large state university. They received course credit equal to approximately three percent of their total grade as compensation for participating in the experiment. Two hundred and eight nonprofessional investors recruited from the general public also participated. They were all 24 years of age or older and had investment activity within the last five years.³ There were three groups of general public nonprofessional investor participants: (1) individuals who participated in a university-wide open house held annually at a large state institution, (2) participants in an accounting continuing education program, and (3) faculty and staff at a large state institution recruited through an e-mail announcement. Participants in the first two groups had the opportunity to win a \$50 gift certificate awarded at random.⁴ Participants in the third group participated for a \$25 cash payment.⁵

Participants' mean (median) age is 34.0 (28.0) years. They report mean (median) full-time work experience of 7.3 (3.5) years. Two hundred sixty-six participants, or 60.3 percent, report experience investing in either an individual company's securities or a mutual fund. Two hundred thirty-four participants, or 53.1 percent, report that they had evaluated a company's performance by analyzing its financial statements three or more times. Ninety participants, or

³ Investment activity was defined as: (1) buying or selling stocks, bonds, or mutual funds at least once or (2) managing asset or contribution allocations in a retirement fund account.

⁴ Chances of winning the gift certificate were approximately one in 20, on average.

⁵ We compared responses of general public participants receiving the two different types of incentives. No significant differences ($p > 0.10$) were noted.

20.4 percent, indicate experience using financial statement information of a firm that reported pro forma earnings.⁶

All participants completed the experimental task in a computer lab under the supervision of one of the researchers. Participants were randomly assigned to experimental conditions. One hundred fifty-six viewed GAAP-only earnings information and 285 viewed a press release and income statement containing pro forma earnings information.⁷

Independent and Dependent Measures

As mentioned above, our experimental design involves one manipulated variable (disclosure content, or *DISCLOSE*) and one measured variable (financial reporting knowledge, or *FRKNOW*). The total number of questions correct on the financial reporting quiz was used to identify high and low financial reporting knowledge participants. Participants' mean score on the quiz is 9.37 out of 14 questions correct, the median is 10. We classify 230 participants with a score of 10 correct (52.2 percent) or better as having high financial reporting knowledge, and the remaining 211 (47.8 percent) as having low financial reporting knowledge (henceforth, "high-knowledge" and "low-knowledge" participants).

We also considered the possible effects of participant type (student or general public participant) on our results. Since the experimental design controls for financial reporting

⁶ We conducted analyses incorporating investment experience, financial analysis experience, and experience using pro forma earnings information into ANOVA models as independent variables. Including these variables did not substantively affect results for our hypotheses tests. Neither investment nor financial analysis experience have a significant direct effect on our dependent measures, nor do they have a significant interactive effect with the other independent variables. The composite earnings evaluations of participants who reported experience using pro forma earnings information are lower overall than for those who did not ($p < 0.01$). There are no substantively meaningful interactive effects between experience using pro forma earnings information and our other independent measures, nor does experience using pro forma earnings information affect participants' investment judgments.

⁷ The number of participants assigned to the pro forma earnings condition is substantially larger than that assigned to the GAAP-only condition, as the pro forma condition participants are further partitioned by time spent viewing the earnings reconciliation in tests of hypotheses 2 and 3.

knowledge differences among participants, we had no *a priori* reason to expect that responses would differ systematically by participant type (cf. Elliott et al. 2007). At the same time, there are several significant demographic differences between the two participant groups.⁸ These differences suggest general public participants are more likely to have acquired financial reporting knowledge through investment experience, while student participants are more likely to have acquired this knowledge through coursework and class exercises. Therefore, we include participant type (*PARTTYPE*) in our analyses as a control measure.

There are two dependent measures: (1) earnings performance evaluations (*EARNEVAL*) and (2) desirability of the company as an investment (*INVEST*). Participants answered four questions regarding the experimental case company's earnings performance, responding on 11-point scales with endpoints of 0 and 10. These questions concerned the company's: (1) fourth quarter earnings performance, (2) fiscal year earnings performance, (3) overall past earnings performance, and (4) earnings potential over the next two years. Cronbach's alpha for the four measures is 0.76, indicating that they are representative of the same construct. Thus, we constructed *EARNEVAL* by averaging the four items into a single dependent measure indicating participants' judgments of earnings performance.⁹ Participants were told to assume that they already owned a diversified stock portfolio and had \$5,000 to invest. They indicated the

⁸ General public participants are older than student participants, on average (44.5 versus 24.6 years; $p < 0.001$) and reported more years of full-time work experience (13.9 versus 1.4 years; $p < 0.001$). A higher proportion of general public (92.8 percent) as opposed to student (31.1 percent) participants report experience investing in either an individual company's securities or a mutual fund ($p < 0.001$). A higher proportion of student (60.5 percent) as opposed to general public (44.7 percent) participants report that they had evaluated a company's performance by analyzing its financial statements three or more times ($p < 0.001$). However, approximately equal proportions of both participant groups indicate experience using financial statement information of a firm that reported pro forma earnings ($p = 0.92$).

⁹ In addition to the tests of the composite measure reported below, we conducted analyses using the four individual earnings measures. Hypothesis test results for each individual measure were substantively equivalent to those for the composite measure.

desirability of the company as an investment (*INVEST*) by responding on a scale with endpoints of \$0 and \$5,000, marked in \$500 increments.

We evaluated the distributions of both dependent measures for normality. The distribution of *EARNEVAL* does not differ significantly from a standard normal distribution (Kolmogorov-Smirnov $Z = 1.10$; $p = 0.18$), while the distribution of *INVEST* appears to violate normality (Kolmogorov-Smirnov $Z = 3.62$; $p < 0.001$). Therefore, we report parametric test results for *EARNEVAL*, but base the analysis of *INVEST* on ranked data.

4. Results

Hypothesis 1

Hypothesis 1 predicts that the presence of pro forma earnings disclosures will have a larger influence on the judgments of low-knowledge nonprofessional investors than on the judgments of high-knowledge nonprofessional investors. To test this hypothesis, we performed two separate 2 by 2 by 2 ANOVAs with disclosure content, financial reporting knowledge level, and participant type as independent measures and *EARNEVAL* and the rank of *INVEST* as dependent measures. Table 1 shows the results of this analysis. Main effects for *DISCLOSE* ($F(1, 433) = 5.52$; $p = 0.02$) and *PARTTYPE* ($F(1, 433) = 4.28$; $p = 0.04$) are significant for *EARNEVAL*. Participants given pro forma earnings disclosures have higher overall earnings evaluations (5.28) than those provided with GAAP-only information (5.01). Students have higher average overall earnings evaluations (5.31) than general public participants (5.04), however, none of the interactions involving participant type are significant ($p \geq 0.10$). As suggested by the hypothesis, the interaction between *DISCLOSE* and *FRKNOW* is statistically significant ($F(1, 433) = 16.19$; $p < 0.001$). Figure 3, Panel A displays a graph of this interaction. The mean

EARNEVAL value for low financial reporting knowledge participants in the pro forma disclosure condition (5.65) is higher than for those participants in the GAAP-only condition (4.74) ($t(df=433) = 4.48; p < 0.001$). At the same time, the mean of *EARNEVAL* for high financial reporting knowledge participants in the pro forma disclosure condition (4.93) does not differ from the judgments of participants in the GAAP-only condition (5.25) ($t(df=433) = -1.19; p = 0.23$). Thus, the results for *EARNEVAL* are as predicted by hypothesis 1.

Insert Figure 3 about here.

Only the main effects for *FRKNOW* ($F(1, 433) = 9.55; p = 0.002$) and *PARTTYPE* ($F(1, 433) = 9.35; p = 0.002$) are significant for the rank of *INVEST*. Low financial reporting knowledge participants have higher average *INVEST* judgments (1547.76) than high financial reporting knowledge participants (1276.09). Students have higher average *INVEST* judgments (1536.48) than general public participants (1262.02). The interaction between the interaction *DISCLOSE* and *FRKNOW* is not significant ($F(1, 433) = 0.55; p < 0.46$), indicating lack of support for H1 for *INVEST* (See also Figure 3—Panel B).

Hypotheses 2 and 3

Hypothesis 2 predicts that the presence of pro forma earnings disclosures will have a smaller influence on the judgments of low-knowledge nonprofessional investors who spend relatively *more* time viewing the earnings reconciliation than on the judgments of low-knowledge nonprofessional investors who spend relatively *less* time viewing the reconciliation. Hypothesis 3 predicts that the presence of pro forma earnings disclosures will have a similar

influence on the judgments of high-knowledge nonprofessional investors, regardless of the relative amount of time spent viewing the earnings reconciliation.

In order to test these hypotheses, it is necessary to distinguish participants in the pro forma disclosure condition by the proportion of time they spend viewing reconciling information relative to all time spent viewing earnings information (*PROREC*). We define this variable as:

$$PROREC = (\text{time spent viewing reconciliation}) / (\text{time spent viewing income statement} + \text{time spent viewing reconciliation})$$

PROREC ranges from 0.0 to 1.0, with a mean of 0.247 and a median of 0.227.¹⁰ We divided our sample by defining more time spent on the reconciliation as a value of 0.23 or greater for *PROREC*. This classifies 142 participants (49.8 percent) who received pro forma earnings disclosures as spending less time on the reconciliation and 143 (50.2 percent) as spending more time.

To test hypotheses 2 and 3, we performed two separate 3 x 2 x 2 ANOVAs with *EARNEVAL* and the rank of *INVEST* as dependent measures. By partitioning the pro forma condition, *DISCLOSE* becomes a variable with three levels: (1) GAAP-only, (2) Pro forma: less time on reconciliation, and (3) Pro forma: more time on reconciliation. The other two factors are *FRKNOW* and *PARTYPE*, as in the test of H1. Table 2 displays the ANOVA results and Table 3 displays means for *EARNEVAL* and *INVEST* by the partitioned *DISCLOSE* condition and levels of *FRKNOW*.

Insert Tables 2 and 3 about here.

¹⁰ High-knowledge participants had higher *PROREC* values, on average (0.273) than low-knowledge participants (0.219) ($p = 0.01$). Also, a larger proportion of low-knowledge (28, or 20.4 percent) than high-knowledge participants (12, or 8.1 percent) did not view the reconciliation at all ($p < 0.01$). *PROREC* did not differ across student versus general public participant types ($p > 0.10$).

The main effects for the partitioned *DISCLOSE* variable ($F(2, 429) = 4.23$; $p = 0.02$), *FRKNOW* ($F(1, 429) = 6.57$; $p = 0.01$), and *PARTTYPE* ($F(1, 429) = 5.41$; $p = 0.02$) are all significant for *EARNEVAL*. Hypotheses 2 and 3 indicate an interaction between the partitioned *DISCLOSE* variable and *FRKNOW*, and that interaction is significant ($F = 10.33$; $p < 0.001$). Figure 4—Panel A is a graph of this interaction. To test hypotheses 2 and 3, we performed a set of planned, post-hoc comparisons (Keppel 1982, 146-147). Table 4 displays these results.

Insert Table 4 and Figure 4 about here.

The mean *EARNEVAL* judgments of low-knowledge participants in the pro forma disclosure condition who spent more time viewing the reconciliation are significantly lower than those of similar participants who spent less time viewing the reconciliation ($t(df=429) = -2.83$; $p = 0.005$), consistent with hypothesis 2. Further, the *EARNEVAL* judgments of low-knowledge participants in the pro forma disclosure condition who spent less time viewing the reconciliation are higher than for similar participants in the GAAP-only condition ($t(df=429) = 5.32$; $p = 0.001$) and the mean *EARNEVAL* judgments of low-knowledge participants in the pro forma disclosure condition who spent more time viewing the reconciliation are also higher than those of similar participants in the GAAP-only condition ($t(df=429) = 2.21$; $p = 0.03$). Thus, spending more time viewing the earnings reconciliation does not fully mitigate the effects of pro forma earnings disclosures on low-knowledge participants' earnings evaluations.

The *EARNEVAL* judgments of high-knowledge participants in the pro forma disclosure condition who spent more time viewing the reconciliation do not differ from those of similar participants who spent less time viewing the reconciliation ($t(df=429) = 0.29$; $p = 0.77$). Indeed,

the mean earnings performance judgments of high-knowledge participants in the pro forma disclosure condition do not differ from those in the GAAP-only condition, regardless of relative time spent viewing the reconciliation ($p > 0.10$). These results support hypothesis 3.

The main effects for *FRKNOW* ($F(1, 429) = 11.66$; $p = 0.001$), and *PARTTYPE* ($F(1, 429) = 11.35$; $p = 0.001$) are significant for the rank of *INVEST*, while the main effect for the partitioned *DISCLOSE* variable ($F(2, 429) = 1.43$; $p = 0.24$) is not significant. The interaction between the partitioned *DISCLOSE* variable and *FRKNOW* is significant ($F = 10.33$; $p < 0.001$). Figure 4—Panel B displays a graph of this interaction and Table 4 shows the results of planned, post-hoc comparisons performed to test hypotheses 2 and 3 for *INVEST*. The *INVEST* judgments of low-knowledge participants in the pro forma disclosure condition who spent more time viewing the reconciliation are lower than for similar participants who spent less time viewing the reconciliation ($t(df = 429) = -2.68$; $p = 0.01$), as predicted by hypothesis 2. Further, the *INVEST* judgments of low-knowledge participants in the pro forma disclosure condition who spent relatively less time viewing the reconciliation are higher than those of similar participants in the GAAP-only disclosure condition ($t(df = 429) = 2.00$; $p = 0.05$), while the *INVEST* judgments of low-knowledge participants in the pro forma disclosure condition who spent more time viewing the reconciliation are not different from those of similar participants in the GAAP-only condition ($t(df = 429) = -0.79$; $p = 0.43$). This suggests that spending relatively more time viewing the earnings reconciliation fully mitigates the influence of pro forma earnings disclosures on low-knowledge nonprofessionals' *INVEST* judgments.

The *INVEST* judgments of high-knowledge participants in the pro forma disclosure condition who spent more time viewing the reconciliation do not differ from those of similar participants who spent less time viewing the reconciliation ($t(df = 429) = 0.37$; $p = 0.71$). This is

as predicted by hypothesis 3. Further, judgments of high-knowledge participants given pro forma earnings disclosures do not differ from those of similar participants provided with GAAP-only disclosures, regardless of reconciliation viewing time ($p > 0.10$).

Supplemental Analysis—Judgment Data

To further explore the effects of pro forma earnings disclosures on nonprofessional investors' judgments, we conducted a supplementary analysis of participant responses in the pro forma disclosure content condition, treating financial reporting knowledge (*FRKNOW*) and the proportion of time spent viewing pro forma reconciling information (*PROREC*) as continuous variables. We fit the following regression function to participant responses in the pro forma disclosure content condition:

$$\begin{aligned}
 JUDGMENT = & b_0 + b_1 FRKNOW + b_2 PROREC + b_3 PARTTYPE + & (1) \\
 & b_4 FRKNOW * PROREC + b_5 FRKNOW * PARTTYPE + \\
 & b_6 PROREC * PARTTYPE + b_7 PARTTYPE * FRKNOW * PROREC
 \end{aligned}$$

where:

JUDGMENT = participants' judgments (either *EARNEVAL* or *INVEST*)

FRKNOW = score on financial reporting knowledge quiz

PROREC = proportion of time spent viewing reconciling information relative to all time spent viewing earnings information

PARTTYPE = participant type (-1 for students, 1 for general public participants)

Following the recommendation of Aiken and West (1991), we mean-centered *FRKNOW* and *PROREC* to facilitate interpretation of simple slopes tests and to avoid multicollinearity problems.

Table 5 shows the results for these regressions. The significant interaction between *FRKNOW* and *PROREC* for both *EARNEVAL* ($p = 0.02$) and rank of *INVEST* ($p = 0.05$) suggests that the influence of relative time spent viewing the reconciliation on nonprofessional judgments

decreases as financial knowledge increases. Figure 5, Panel A diagrams these interactions. This figure shows regression lines estimated at $FRKNOW = 6$ and $FRKNOW = 12$ (the 10th and 90th percentiles of $FRKNOW$, respectively). Panel B of Figure 5 shows the results of simple effects tests of the coefficient on $PROREC$. The coefficient on $PROREC$ at $FRKNOW = 6$ is negative and significant for the model with $EARNEVAL$ as the dependent measure ($p = 0.004$) and marginally significant for the model with $FRKNOW$ as the dependent measure ($p = 0.08$). The coefficient on $PROREC$ at $FRKNOW = 12$ is not significant for either model ($p > 0.30$). These results are consistent with the $ANOVA$ tests and our predictions in hypotheses 2 and 3.

Insert Table 5 and Figure 6 about here.

Participant Type Effects

As noted earlier, the main effect for participant type is significant in the $2 \times 2 \times 2$ ANOVAs used to test hypothesis 1 and the $3 \times 2 \times 2$ ANOVAs used to test hypotheses 2 and 3 for both dependent measures. Overall, the mean $EARNEVAL$ judgments for students (5.31) are higher than for general public participant (5.04), and the mean $INVEST$ judgments for students (1,536.48) are higher than for general public participants (1,262.02). However, none of the interactions involving participant type are significant at conventional levels in any of these analyses ($p \geq 0.10$).

The coefficient for $PARTTYPE$ in the supplemental regression analyses of participants receiving pro forma earnings disclosures is also negative and significant ($p = 0.005$ for $EARNEVAL$; $p < 0.001$ for $INVEST$), consistent with the above result that students have higher earnings and investment judgments than the general public. The regressions also indicate a

significant *PARTTYPE* by *FRKNOW* interaction for *EARNEVAL* ($p = 0.04$), but not for *INVEST* ($p = 0.16$). Figure 6 Panel A diagrams the interaction between *PARTTYPE* by *FRKNOW* for *EARNEVAL*, showing regression lines estimated for student and general public participants. Panel B of Figure 6 shows the results of simple effects tests of the coefficient on *FRKNOW* for each participant type. While both coefficients are statistically significant ($p < 0.03$), there is a larger negative coefficient on *FRKNOW* for students ($b = -0.26$) than for general public participants ($b = -0.10$).

In summary, we find limited evidence that the earnings evaluations of low-knowledge student participants may be influenced by pro forma earnings disclosures to a greater extent than low-knowledge nonprofessional investors from the general public. This effect did not appear when we partitioned the sample into two groups based on financial reporting knowledge level, but we do find evidence for this effect when treating financial reporting knowledge as a continuous variable. Also, the effect does not appear for investment judgments. While these results are potentially interesting, we also note that none of the observed significant effects indicate that the results of our hypotheses tests would be different for nonprofessional investors recruited from the general public and upper-division / graduate accounting student populations.

Supplemental Analysis—Information Viewing Data

A key assumption underlying H3 is that high-knowledge investors are able to acquire and integrate relevant information on the differences between GAAP and pro forma earnings from either the reconciliation or other sections of the earnings press release. The income statement presented in the experimental materials contained footnotes describing the nonrecurring items used to determine pro forma income. Thus, high-knowledge investors could acquire information

on nonrecurring items either by viewing the income statement or the earnings reconciliation. This suggests that high-knowledge investors presented with pro forma earnings information who spend relatively less time viewing the reconciliation should spend more time viewing the income statement. On the other hand, since low-knowledge investors are not likely to acquire information on nonrecurring items from the income statement footnotes, the time they spend viewing the income statement should not be affected by the relative amount of time they spend viewing the reconciliation.

To test whether this information viewing behavior occurred, we performed a 3 x 2 x 2 ANOVA with time spent viewing the income statement as the dependent measure and the partitioned *DISCLOSE* variable, *FRKNOW*, and *PARTTYPE* as independent measures. Main effects for *FRKNOW* ($F(1, 429) = 7.87; p = 0.01$) and *PARTTYPE* ($F(1, 429) = 28.92; p < 0.001$) are significant. High-knowledge participants spend more time on average examining the income statement (109.4 seconds) than low-knowledge participants (100.5 seconds). Also, general public participants spend more time on average examining the income statement (120.7 seconds) than students (91.3 seconds). The *DISCLOSE* by *FRKNOW* interaction is significant ($F(2, 429) = 5.14; p = 0.01$). None of the other main effects or interactions are statistically significant ($p > 0.10$).

Figure 7 displays the *DISCLOSE* by *FRKNOW* interaction for time spent viewing the income statement. Post-hoc comparisons show that high-knowledge participants presented with pro forma information who spend relatively *less* time on average viewing the earnings reconciliation spend *more* time examining the income statement (127.5 seconds) than high-knowledge participants who spend relatively more time viewing the reconciliation (98.2 seconds) ($t(df = 429) = 2.80; p = 0.01$). On the other hand, the average time low-knowledge participants

presented with pro forma information spend viewing the income statements does not differ for those who spend relatively less (89.1 seconds) versus more (107.6 seconds) time on the reconciliation (t ($df = 429$) = -1.22; $p = 0.22$). This result is consistent with the assumption that high-knowledge investors who spend relatively less time acquiring information from the reconciliation page will instead acquire the information from elsewhere in the earnings press release.^{11 12}

Insert Figure 7 about here.

We also fitted the regression model in equation (1) with total time on the income statement as a dependent measure. As with the regression analyses of judgment data, only data for participants in the pro forma disclosure content condition was included in the analysis. Similar to the ANOVA results reported above, there is a positive relationship between the continuous measure of *FRKNOW* and time spent examining the income statement ($b_1 = 5.83$; $t = 3.75$; $p < 0.001$) and the coefficient on the *PARTTYPE* dummy variable is significant and positive ($b_3 = 22.78$; $t = 5.84$; $p < 0.001$).¹³ Also, the coefficient on *PROREC* is significant and negative ($b_2 = -64.46$; $t = -3.10$; $p = 0.002$) as is the coefficient on *FRKNOW * PROREC* ($b_4 = -$

¹¹ Dilla, Janvrin, and Jeffrey's (2010) information viewing data indicate that professional investors may be viewing and acquiring information on reconciling items from the narrative section of the earnings release. If this were also true for high-knowledge nonprofessional investors, then a *DISCLOSE* by *FRKNOW* interaction should occur in a model with time spent reading the narrative as a dependent measure. We performed this analysis, and the interaction was not significant ($p = 0.39$).

¹² While this analysis focuses on investors given pro forma earnings information, it is also possible that high-knowledge investors given GAAP-only disclosures who considered information on non-recurring items to be important would view and acquire this information from the footnotes to the GAAP income statement. If this were occurring, the time high-knowledge investors spend viewing the GAAP income statement should be the same as the time spent viewing the pro forma income statement by high-knowledge investors who spend relatively *less* time viewing the reconciliation. This is not the case, as high-knowledge participants in the GAAP-only disclosure condition spend less time on average viewing the income statement (104.8 seconds) than high-knowledge pro forma disclosure condition participants who spend relatively *less* time on average viewing the earnings reconciliation (127.5 seconds) ($p = 0.01$).

¹³ The overall model is significant ($F(7, 277) = 9.34$; $p < 0.001$). The R-squared value is 0.19 and the adjusted R-squared is 0.17.

22.87; $t = -3.01$; $p = 0.003$).¹⁴ Figure 8, Panel A displays the interaction and Panel B shows the results of simple effects tests at different levels of *FRKNOW*. The coefficient on *PROREC* at *FRKNOW* = 6 is not significant ($p = 0.75$); the coefficient at *FRKNOW* = 12 negative and significant ($p < 0.001$). These results are consistent with the *ANOVA* tests of the interaction presented above.

Insert Figure 8 about here.

6. Summary and Discussion

Companies often include pro forma financial information in their earnings press releases. Critics argue that allowing management discretion in earnings disclosure may produce financial information that is misleading, particularly to nonprofessional investors. To address this concern, SEC's Regulation G (SEC 2003) requires companies that disclose non-GAAP financial information reconcile this information to GAAP information. Elliott (2006) finds that the earnings evaluation judgments of one group of nonprofessional investors (i.e. MBA students) who are provided with earnings reconciliation information were no different than those of similar investors who view GAAP-only earnings information. However, nonprofessional investors are a heterogeneous group (Elliott et al. 2007; Elliott et al. 2008) with considerable variation in financial reporting knowledge. We examine whether the ability to evaluate pro forma earnings disclosures is a joint function of financial reporting knowledge and information viewing behavior. Table 6 summarizes our results.

Insert Table 6 about here.

¹⁴ None of the other coefficients in the model are statistically significant ($p > 0.10$).

Our results indicate that low-knowledge nonprofessional investors evaluate the earnings performance of a company to be higher when they receive pro forma information that presents higher earnings than GAAP-only disclosures. At the same time, the earnings performance judgments of high-knowledge nonprofessional investors are the same whether they receive GAAP-only or GAAP and pro forma information. The interaction between knowledge level and disclosure type is not significant when participants evaluate the desirability of the investment. Disclosure type does not influence the average investment desirability ratings of either low- or high-knowledge nonprofessional investors. These findings support hypothesis 1 for earnings evaluations, but not for desirability of investment judgments.

Further, low-knowledge nonprofessional investors who spend more time looking at the reconciliation make lower earnings performance judgments than similar investors who spend more time viewing the reconciliation. Spending relatively more time viewing the reconciliation only partially mitigates the influence of pro forma disclosures on earnings judgments made by low-knowledge nonprofessional investors. Similarly, low-knowledge nonprofessional investors who spend more time looking at the reconciliation evaluate the investment as being less desirable than do similar investors who spend more time viewing the reconciliation. These findings support hypothesis 2 for both the earnings evaluation and the investment desirability variables.

The earnings judgments of high-knowledge nonprofessional investors do not appear to be influenced by pro forma earnings disclosures, whether these individuals spend a substantial proportion of time viewing the earnings reconciliation or not. Similarly, the evaluation of the desirability of the investment by high-knowledge nonprofessional investors does not appear to be influenced by their reconciliation viewing behavior. These results support hypothesis 3.

A supplemental analysis treating financial reporting knowledge and relative amount of time spent viewing the reconciliation as continuous variables finds an interactive effect on earnings judgments for these two measures. The relative amount of time spent viewing the reconciliation has a stronger negative effect on both the composite earnings judgments and the investment desirability judgments of low-knowledge participants than high-knowledge participants. This result is also consistent with hypotheses 2 and 3.

Student surrogates tend to make higher composite earnings judgments overall than nonprofessional investors recruited from the general public. We also find limited evidence that student surrogates' level of financial reporting knowledge influences their earnings judgments made in the presence of pro forma information to a greater extent than for participants from the general public. However, none of our comparisons of the two participant groups suggest that the result of hypotheses tests should differ for student surrogate and general public participants.

Finally, a supplemental analysis of information viewing behavior finds that high-knowledge participants presented with pro forma earnings information who spend a smaller proportion of time viewing the reconciliation relative to other earnings information tend to spend more time viewing the income statement, with its footnote disclosures of non-recurring items. The same result does not occur for low-knowledge participants. This suggests that high-knowledge investors may be able to acquire information relevant to the differences between GAAP and pro forma earnings by viewing either the reconciliation or footnotes to the pro forma income statement. On the other hand, low-knowledge investors appear to be more likely to acquire this information by viewing the reconciliation.

There are limitations to our study. First, we do not have details on why low- and high-knowledge investors follow a given information viewing strategy. The low-knowledge investors

who spent proportionately less time viewing the earnings reconciliation appear to be following an effort minimization strategy, as they also spent less time in absolute terms than high-knowledge investors viewing the pro forma income statement. It is not clear whether these participants did so because they lacked the motivation to spend more time viewing the relevant information, or if they were simply unaware of the importance of the information presented on the reconciliation page. It is also not clear why some high-knowledge investors apparently spent more time viewing information on the differences between GAAP and pro forma earnings from the income statement rather than the reconciliation, since presumably, the intent of the reconciliation is to make such information easier to view and acquire.

Second, we do not have data on how participants processed information on reconciling items once they acquired it. For example, there are at least three different explanations for the lack of significant judgment differences between the GAAP and pro forma disclosure conditions for high-knowledge participants. The first is that the GAAP condition participants calculate an amount equal to the pro forma earnings amount while the pro forma participants use the pro forma earnings number given to them. The second is that the pro forma participants calculate an amount equal to the GAAP earnings amount while the GAAP participants use the GAAP earnings amount given to them. The third is that both participant groups calculate an earnings amount between the pro forma earnings and GAAP earnings amounts given to them.¹⁵ The information viewing data rule the first explanation out, as it provides evidence that high-knowledge participants in the pro forma disclosure viewed reconciling information from either the income statement or reconciliation. However, these data do not allow us to distinguish clearly between the second and third explanations.

¹⁵ We thank an anonymous reviewer for this observation.

Our final limitation is that we measured investing experience of the general public participants only in terms of having made one or more investment decisions within the last five years; we did not assess the specific investment experience in years or in actual number of trades. Thus, we are unable to determine if differences exist between investors with varying amounts of experience or if there are interactions between financial reporting knowledge and specific experience levels. We are also unable to distinguish the effects of training and experience on investor knowledge and judgments.

The results of the study are important as nonprofessional investors are a heterogeneous group whose financial reporting knowledge (Elliott et al. 2007) and level of investment experience (Elliott et al. 2008) varies considerably. We extend earlier research on the effects of pro forma disclosures on investor judgments (Frederickson and Miller 2004; Elliott 2006) to examine the effects of individual differences in nonprofessional investor financial reporting knowledge and information viewing behavior on their judgments in the presence of pro forma earnings information. We show that differences in general financial reporting knowledge and information viewing behavior make a difference in how earnings reconciliation information affects nonprofessional investors' judgments.

Our results suggest that the effectiveness of mandated financial reporting formats may be dependent on characteristics of the general investing public that vary across investors. In particular, we find that some low-knowledge investors apparently did not acquire information on nonrecurring items from the provided reconciliation. For such investors, the reconciliation mandated by Regulation G may not have the intended effect of improving the disclosure of pro forma earnings to nonprofessional investors. On the other hand, it appears that some high-knowledge investors relied on income statement footnotes to a greater extent than the

reconciliation for this information. For these investors, one might argue that the Regulation G reconciliation disclosures are not necessary. Still, it appears that a substantial proportion of both low- and high-knowledge investors in our study viewed the reconciliation information and incorporated it in their judgments. It appears that Regulation G had its intended effect for these investors. We recommend that regulators and standard setters should consider that their actions may have differential effects, depending on investor type and financial knowledge level, as they promulgate reporting requirements for non-GAAP earnings measures.

References

- Aiken, L.S., and S.G. West. 1991. *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Allee, K.D., N. Battacharya, E.L. Black, and T.E. Christensen. 2007. Pro forma disclosure and investor sophistication: External validation of experimental evidence using archival data. *Accounting, Organizations and Society* 32 (3): 201-222.
- Alpert, B. 2001. Maybe pro-forma earnings aren't so bad after all. *Barron's* (August 6): 30.
- Bhattacharya, N., E.L. Black, T.E. Christensen, and C.R. Larson. 2003. Assessing the relative informativeness and permanence of pro forma earnings and GAAP operating earnings. *Journal of Accounting and Economics* 36 (1-3): 285-319.
- Bonner, S.E., and B. Lewis. 1990. Determinants of auditor expertise. *Journal of Accounting Research* (Supplement): 1-20.
- _____, and N. Pennington. 1991. Cognitive processes and knowledge as determinants of auditor expertise. *Journal of Accounting Literature* 10: 1-50.
- Dilla, W.N., D.J. Janvrin, and C.G. Jeffrey. 2010. The impact of graphical displays of pro forma earnings information on professional and nonprofessional investors' earnings judgments. Working paper. Iowa State University.
- Elliott, W.B. 2006. Are investors influenced by pro forma emphasis and reconciliations in earnings announcements? *The Accounting Review* 81 (1): 113-134.
- _____, F. Hodge, J. Kennedy, and M. Pronk. 2007. Are M.B.A. students a good proxy for nonprofessional investors? *The Accounting Review* 82 (1): 139-168.
- _____, F. Hodge, and K. Jackson. 2008. The association between nonprofessional investors' information choices and their portfolio returns: The importance of investing experience. *Contemporary Accounting Research* 25 (2): 473-498.
- Entwistle, G., G. Feltham, and C. Mbagwu. 2006. Misleading disclosure of pro forma earnings: An empirical examination. *Journal of Business Ethics* 69 (4): 355-372
- Financial Accounting Standards Board (FASB). 1978. *Objectives of Financial Reporting by Business Enterprises Concepts Statement 1*. Norwalk CT: FASB.
- Frederickson, J.R., and J.S. Miller. 2004. The effects of pro forma earnings disclosures on analysts' and nonprofessional investors' equity valuation judgments. *The Accounting Review* 79 (3): 667-686.
- Henry, D. 2001. The numbers game. *BusinessWeek* (May 14).

- Hirst, E., K. Jackson, and L. Koonce. 2003. Improving financial reports by revealing the accuracy of prior estimates. *Contemporary Accounting Research* 20 (1): 165-193.
- Hodge, F., J. Kennedy, and L. Maines. 2004. Does search-facilitating technology improve the transparency of financial reporting? *The Accounting Review* 79 (3): 687-703.
- Investment Company Institute. 2008. *Equity and Bond Ownership in America, 2008*. Available at: http://www.ici.org/pdf/rpt_08_equity_owners.pdf.
- Johnson, W.B., and W.C. Schwartz, Jr. 2005. Are investors misled by “pro forma” earnings? *Contemporary Accounting Research* 22 (4): 915-963.
- Keppel, G. 1982. *Design and Analysis: A Researcher’s Handbook (2nd edition)*. Englewood Cliffs: Prentice-Hall.
- Libby, R., and J. Luft. 1993. Determinants of judgment performance in accounting settings: Ability, knowledge, motivation, and environment. *Accounting, Organizations and Society* 18 (July): 425-451.
- 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.
- Mincer, J. 2006. As the 401(k) turns 25, has it improved with age? *Wall Street Journal* November 14: D.2.
- Securities and Exchange Commission (SEC). 2001. Release Nos. 33-8039, 34-45124, FR-59. *ACTION: Cautionary Advice Regarding the Use of "Pro Forma" Financial Information in Earnings Releases*. <http://www.sec.gov/rules/other/33-8039.htm>.
- _____. 2003. *Final Rule: Conditions for Use of Non-GAAP Financial Measures*. Release Nos. 33-8176; 34-47226; FR-65. January 22. Washington, D.C.: Government Printing Office.
- Securities Industry Association (SIA). 2002. *Equity Ownership in America*. New York: SIA.
- U.S. House of Representatives, Committee on Financial Services. 2002. Sarbanes-Oxley Act of 2002 (SOX). Public Law No. 107–204. Washington: Government Printing Office.
- Vera-Munoz, S.C., W.R. Kinney, Jr., and S.E. Bonner. 2001. The effects of domain experience and task presentation format on accountants’ information relevance assurance. *The Accounting Review* 76 (3): 405-430.

TABLE 1

Analysis of variance with *DISCLOSE*, *FRKNOW*, and *PARTTYPE* as independent variables

Independent variables	<i>EARNEVAL</i>		Rank of <i>INVEST</i>	
	F-statistic	P	F-statistic	P
<i>DISCLOSE</i>	5.52	0.02	0.12	0.73
<i>FRKNOW</i>	1.52	0.22	9.55	0.002
<i>PARTTYPE</i>	4.28	0.04	9.35	0.002
<i>DISCLOSE</i> x <i>FRKNOW</i>	16.19	0.001	0.55	0.46
<i>DISCLOSE</i> x <i>PARTTYPE</i>	0.74	0.39	0.52	0.47
<i>FRKNOW</i> x <i>PARTTYPE</i>	0.26	0.61	0.00	0.98
<i>DISCLOSE</i> x <i>FRKNOW</i> x <i>PARTTYPE</i>	2.77	0.10	0.87	0.35

TABLE 2

Analysis of variance with *DISCLOSE* (partitioned), *FRKNOW*, and *PARTTYPE* as independent variables

Independent variables	<i>EARNEVAL</i>		Rank of <i>INVEST</i>	
	F-statistic	p	F-statistic	P
<i>DISCLOSE</i>	4.23	0.02	1.43	0.24
<i>FRKNOW</i>	6.57	0.01	11.66	0.001
<i>PARTTYPE</i>	5.41	0.02	11.35	0.001
<i>DISCLOSE</i> x <i>FRKNOW</i>	10.33	0.001	2.64	0.07
<i>DISCLOSE</i> x <i>PARTTYPE</i>	0.29	0.75	0.32	0.73
<i>FRKNOW</i> x <i>PARTTYPE</i>	0.01	0.92	0.04	0.85
<i>DISCLOSE</i> x <i>FRKNOW</i> x <i>PARTTYPE</i>	1.25	0.29	0.43	0.65

TABLE 3
 Dependent measures by disclosure content(partitioned) and financial reporting knowledge level

Panel A: Means for *EARNEVAL*

Disclosure content		Financial reporting knowledge level		All participants
		Low	High	
GAAP-only	Mean	4.74	5.25	5.01
	(n)	(74)	(82)	(156)
	[Std. Dev.]	[1.56]	[1.34]	[1.47]
Pro forma: Less time on reconciliation	Mean	6.02	4.90	5.47
	(n)	(73)	(70)	(143)
	[Std. Dev.]	[1.41]	[1.59]	[1.60]
Pro forma: More time on reconciliation	Mean	5.24	4.97	5.09
	(n)	(64)	(78)	(142)
	[Std. Dev.]	[1.61]	[1.51]	[1.55]
Means across disclosure content conditions	Mean	5.33	5.05	5.18
	(n)	(211)	(230)	(441)
	[Std. Dev.]	[1.61]	[1.48]	[1.59]

Panel B: Means for *INVEST*

Disclosure content		Financial reporting knowledge level		All participants
		Low	High	
GAAP-only	Mean	1527.03	1298.78	1407.05
	(n)	(74)	(82)	(156)
	[Std. Dev.]	[1276.48]	[1159.66]	[1217.88]
Pro forma: Less time on reconciliation	Mean	1849.32	1235.71	1548.95
	(n)	(73)	(70)	(143)
	[Std. Dev.]	[1153.75]	[1247.38]	[1235.21]
Pro forma: More time on reconciliation	Mean	1234.38	1288.46	1264.08
	(n)	(64)	(78)	(142)
	[Std. Dev.]	[1042.62]	[1220.81]	[1140.32]
Means across disclosure content conditions	Mean	1549.76	1276.09	1407.03
	(n)	(211)	(230)	(441)
	[Std. Dev.]	[1187.69]	[1202.65]	[1201.98]

TABLE 4
Planned post-hoc comparisons within each *FRKNOW* group

	<i>EARNEVAL</i>		Rank of <i>INVEST</i>	
	<i>t</i> -statistic	<i>p</i> -value	<i>t</i> -statistic	<i>p</i> -value
Panel A: Low-knowledge participants				
Pro forma: More vs. less time on reconciliation	-2.83	0.005	-2.68	0.01
Pro forma: Less time on reconciliation vs. GAAP-only	5.32	0.001	2.00	0.05
Pro forma: More time on reconciliation vs. GAAP-only	2.21	0.03	-0.79	0.43
Panel B: High-knowledge participants				
Pro forma: More vs. less time on reconciliation	0.29	0.77	0.37	0.71
Pro forma: Less time on reconciliation vs. GAAP-only	-1.17	0.24	-0.43	0.66
Pro forma: More time on reconciliation vs. GAAP-only	-0.91	0.37	-0.06	0.95

TABLE 5
 Regression analysis of responses in pro forma earnings disclosure condition

	<i>EARNEVAL</i>			Rank of <i>INVEST</i>		
	coefficient	t-statistic	p-value	coefficient	t-statistic	p-value
Intercept	5.30	55.66	0.000	221.02	29.40	0.000
<i>FRKNOW</i>	-0.18	-4.66	0.000	-11.09	-3.71	0.000
<i>PROREC</i>	-0.96	-1.90	0.06	-22.21	-0.56	0.58
<i>PARTTYPE</i>	-0.27	-2.80	0.005	-28.96	-3.85	0.000
<i>FRKNOW</i> * <i>PROREC</i>	0.45	2.45	0.02	28.31	1.93	0.05
<i>FRKNOW</i> * <i>PARTTYPE</i>	0.49	2.08	0.04	4.26	1.42	0.16
<i>PROREC</i> * <i>PARTTYPE</i>	0.58	1.14	0.25	-5.02	-0.13	0.90
<i>PARTTYPE</i> * <i>FRKNOW</i> * <i>PROREC</i>	-0.18	-0.97	0.33	-14.53	-0.99	0.32

	Model summary statistics	
	<i>EARNEVAL</i>	Rank of <i>INVEST</i>
F (7,277)	5.07	4.12
p-value	<0.001	<0.001
R-squared	0.11	0.09
Adjusted R-squared	0.09	0.07

TABLE 6
Summary of hypothesis test results

Hypothesis	<i>EARNEVAL</i>	<i>INVEST</i>
H1: The presence of pro forma earnings disclosures will have a larger influence on the judgments of low-knowledge nonprofessional investors than on the judgments of high-knowledge nonprofessional investors.	Supported.	Not supported—main effect only for investor knowledge, no disclosure effect.
H2: The presence of pro forma earnings disclosures will have a <i>smaller</i> influence on the judgments of low-knowledge nonprofessional investors who spend relatively <i>more</i> time viewing an earnings reconciliation than on the judgments of low-knowledge nonprofessional investors who spend relatively less time viewing the earnings reconciliation.	Supported.	Supported.
H3: The presence of pro forma earnings disclosures will have a similar influence on the judgments of high-knowledge nonprofessional investors, regardless of the relative amount of time spent viewing the earnings reconciliation.	Supported.	Supported.

Figure 1 Sample investor relations web page

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

- Pro Forma Income Statements**
 - Reconciliation of non-GAAP Items
- Balance Sheets**
- Cash Flow Statements**

Enter Responses

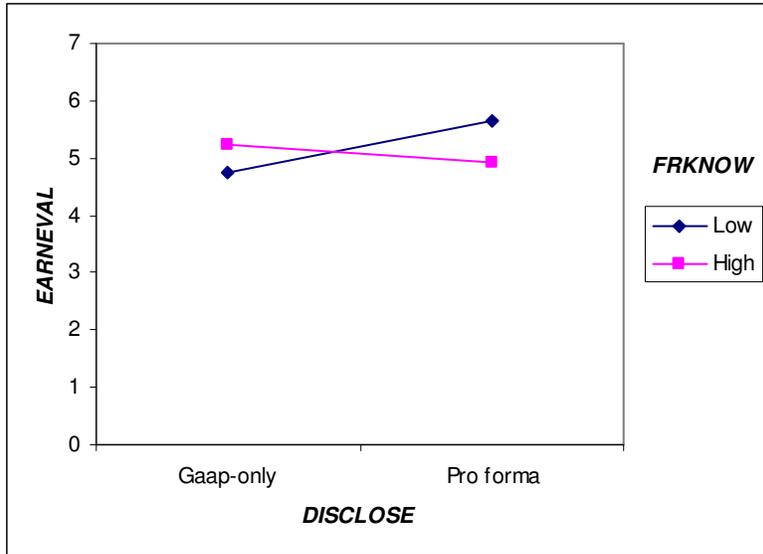
Figure 2 Non-GAAP to GAAP reconciliation

Investor Relations				
Income Statements				
DRUGS R US CORPORATION				
Reconciliation of non-GAAP Items Required by SEC Rules				
A reconciliation of non-GAAP 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
Nonrecurring 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 nonrecurring items	\$ 0.48	\$ 0.51	\$ 1.79	\$ 1.80
Nonrecurring costs (gains) net of tax benefit	0.82		0.78	(0.03)
Diluted earnings (loss) per common share after nonrecurring 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

Figure 3 Mean composite earnings judgments by disclosure content and financial reporting knowledge level

Panel A: Composite earnings judgment (*EARNEVAL*)



Panel B: Investment judgment (*INVEST*)

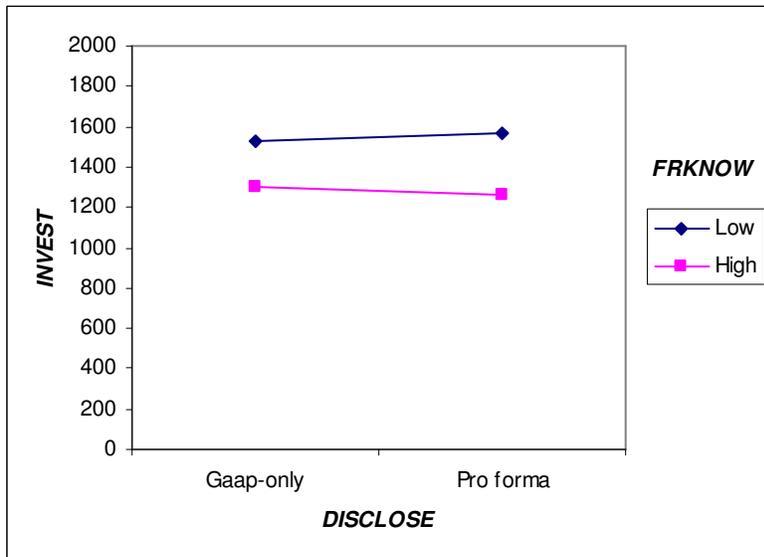
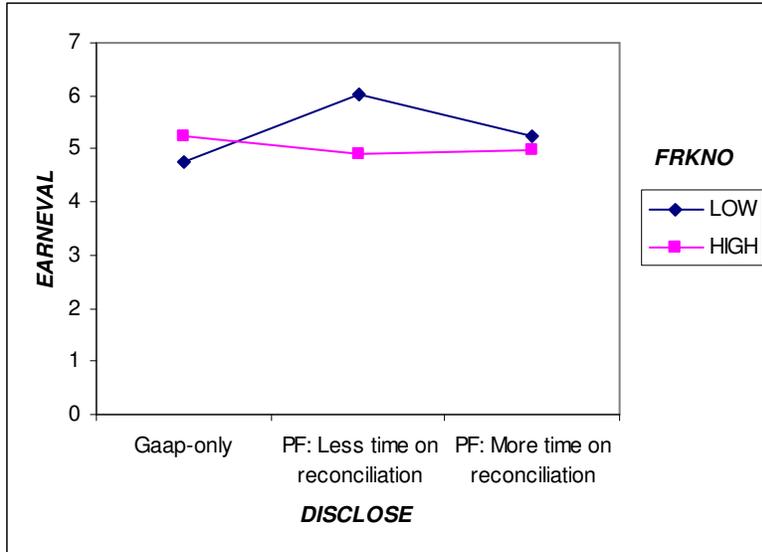


Figure 4 Mean composite earnings judgments by disclosure content (partitioned) and financial reporting knowledge level

Panel A: Composite earnings judgment (*EARNEVAL*)



Panel B: Investment judgment (*INVEST*)

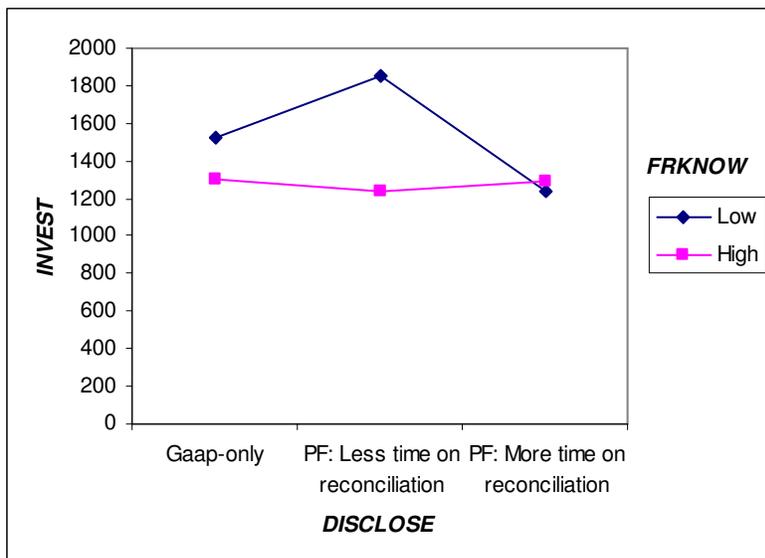
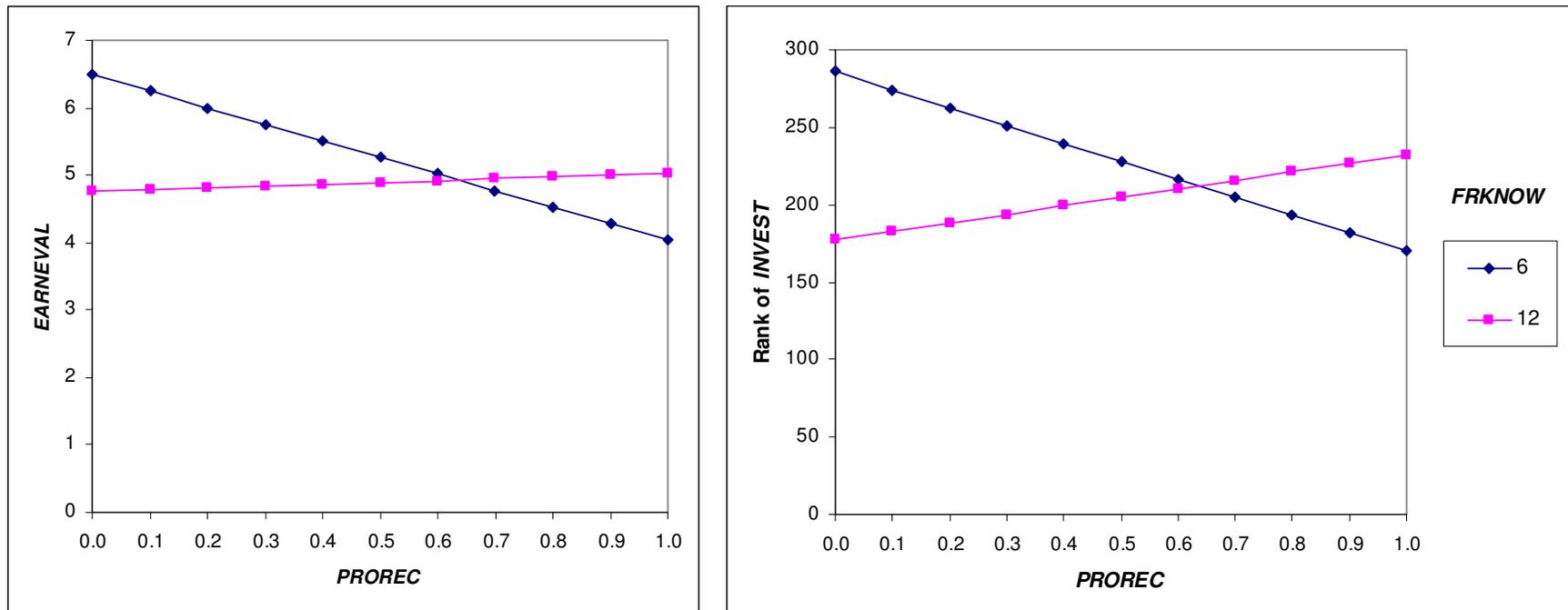


Figure 5 Supplemental analysis: Financial reporting knowledge x proportion of time on reconciliation interaction

Panel A: Plots of the regression lines for the interaction

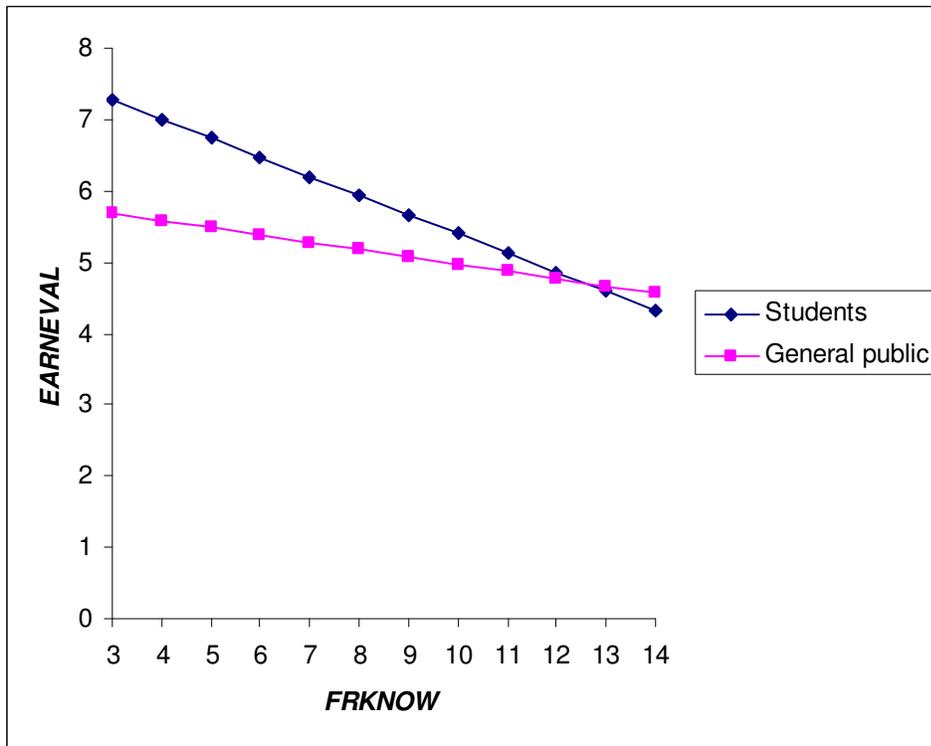


Panel B: Simple effects tests at levels of *FRKNOW*

<i>FRKNOW</i>	<i>EARNEVAL</i>			<i>INVEST</i>		
	b (<i>PROREC</i>)	t-statistic	p-value	b (<i>PROREC</i>)	t-statistic	p-value
6	-2.45	-2.94	0.004	-115.31	-1.75	0.08
12	0.27	0.40	0.69	54.61	1.03	0.31

Figure 6 Regression analysis: Participant type by financial reporting knowledge interaction

Panel A: Plots of the regression lines for the interaction



Panel B: Simple effects tests for each participant group

Participant type	b (<i>FRKNOW</i>)	t-statistic	p-value
Students	-0.26	-4.13	< 0.001
General public	-0.10	-2.24	0.03

Figure 7 Time viewing the earnings statement by disclosure content (partitioned) and financial reporting knowledge level

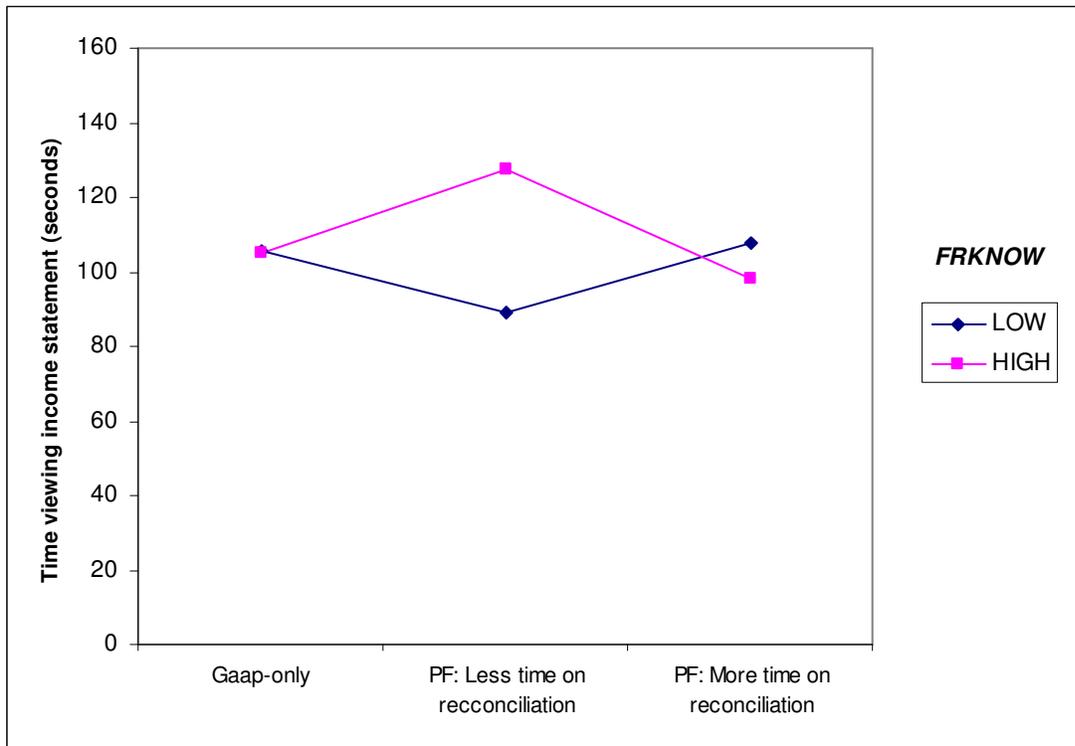
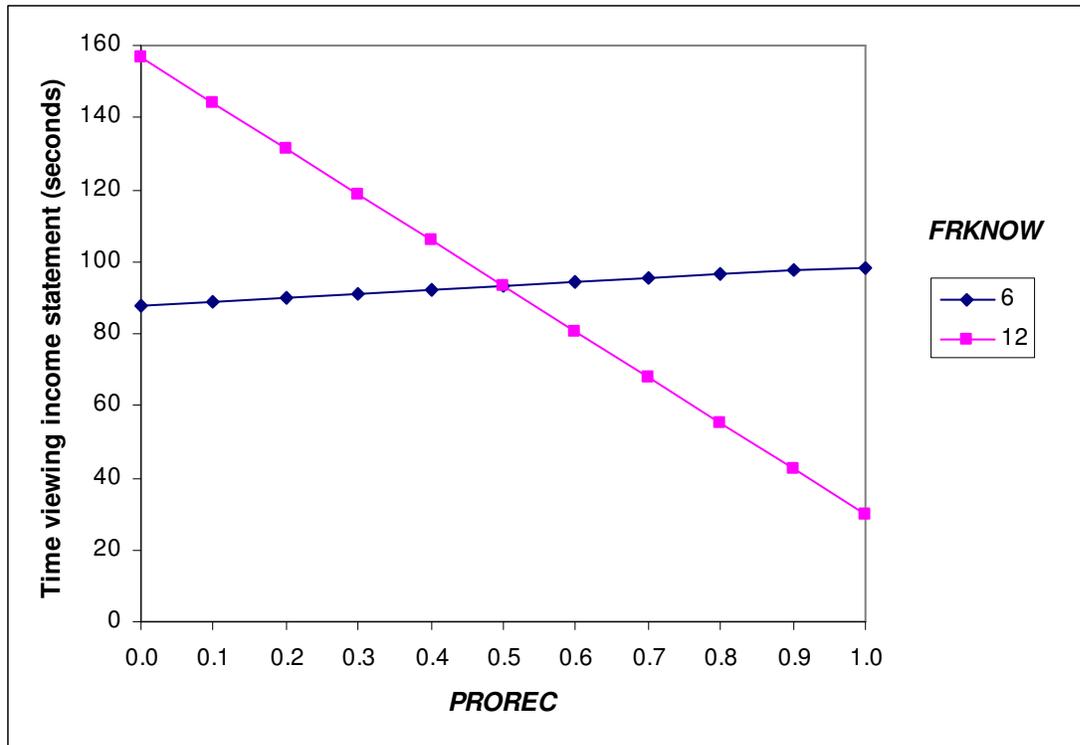


Figure 8 Regression analysis: Time viewing the earnings statement by relative amount of time spent viewing the reconciliation and financial reporting knowledge level

Panel A: Plots of the regression lines for the interaction



Panel B: Simple effects tests at levels of *FRKNOW*

<i>FRKNOW</i>	<i>b (PROREC)</i>	t-statistic	p-value
6	10.75	0.31	0.75
12	-126.50	-4.58	< 0.001