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Other Comprehensive Income: Do Nonprofessional Investors Value It as Much as Net Income?

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Abstract: This study examines how investors incorporate unrealized gains or losses reported in Other Comprehensive Income (OCI) into their investment judgments. Since unrealized gains or losses can be presented in either OCI or net income—gains from trading securities are included in net income, while those from available-for-sale securities are reported in OCI (ASC 320 and ASC 851)—it raises the question of whether OCI items are perceived as equally significant as net income items. To explore this, we conducted a 2 × 2 experiment with 240 individual investors, manipulating the presentation of unrealized gains or losses in either net income or OCI. Our findings reveal that unrealized gains are valued significantly lower when presented in OCI compared to net income, indicating that investors see OCI-reported gains as less relevant. However, for unrealized losses, the incorporation degree remained consistent across both presentations, reflecting a general aversion to unrealized losses regardless of how they are reported.

Keywords: net income; other Comprehensive Income; categorization; unrealized gains or losses; assimilation

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1. Introduction

The collapse of Silicon Valley Bank (SVB) in March 2023, which once held over USD 200 billion in assets, highlights the critical importance of understanding unrealized gains or losses that are not reported in net income. SVB experienced significant unrealized losses on its securities as interest rates increased, causing a sharp decline in its market value (OIG 2024). These unrealized losses were crucial to the bank's financial instability. As the value of these securities plummeted, SVB encountered a liquidity crisis, which led to a bank run and ultimately the bank's collapse. This situation highlights the need for investors to comprehend unrealized items, as it can reveal financial vulnerabilities not apparent in net income alone.

Unrealized gains or losses are often reported as part of Other Comprehensive Income (OCI). Publicly traded companies in the U.S. and Europe are required to report Comprehensive Income (CI) in their financial statements, which combines net income (NI) with Other Comprehensive Income (OCI). Current standards mandate that OCI be presented alongside NI (ASC 220), though the usefulness of OCI remains controversial (Du et al. 2024). Our study seeks to examine the extent to which investors incorporate OCI information, such as unrealized gain/loss, into their investment judgments.

Other Comprehensive Income (OCI) is a crucial component of financial reporting, offering a more comprehensive view of a company's financial health. In 2023, Amazon.com, Inc. reported a net income of USD 30.4 billion. Additionally, the company reported Other Comprehensive Income of USD 1.4 billion, driven mainly by positive foreign currency translation adjustments and gains on available-for-sale debt securities. This culminated in a total Comprehensive Income of USD 31.9 billion for the year. Alternately, in 2023, Apple Inc. reported a net income of USD 97.0 billion. However, the company recorded an OCI loss of USD 343 million, primarily due to unrealized losses from foreign currency

translation and unrealized losses on derivative instruments, partially offset by gains on marketable debt securities. This resulted in a total Comprehensive Income of USD 96.7 billion for the year.

Previous research suggests that OCI items are typically transient, offering limited predictive value for future cash flows or earnings, and therefore have minimal impact on company valuation (Bamber et al. 2010; Barker 2004; Chambers et al. 2007; Linsmeier et al. 1997; Yen et al. 2007). Nevertheless, experimental studies reveal that OCI can influence investors' stock price judgments (Du et al. 2024; Hirst and Hopkins 1998), risk assessments, and evaluations of management performance (Maines and McDaniel 2000), although the extent and nature of this impact remains insufficiently defined. As a result, how individual investors assess and respond to OCI and its components continues to be an area of uncertainty, warranting further investigation.

In a recent study, Du et al. (2024) found that financial analysts incorporate unrealized gains or losses into their valuation judgments, even though these items are of an unrealized nature and reported in Other Comprehensive Income (OCI). Their study focuses solely on unrealized items reported in OCI, investigating whether OCI has informational value. However, it is important to note that unrealized gains or losses can be reported either in OCI or net income. For instance, unrealized gains or losses from trading securities are included in net income, while those from available-for-sale securities are reported in OCI (ASC 320 and ASC 851). This raises the question of whether items reported in OCI have the same impact on valuation as those reported in net income. This question is important because it explores whether investors perceive OCI items of equal significant to those in net income. Additionally, it examines the consistency and comparability of financial information, which are fundamental to accurate financial analysis and decision-making.

Building on prior research in accounting and psychology, particularly on categorization, we propose that for investors to effectively incorporate OCI information—such as unrealized gains or losses into their investment decisions, they must assimilate this information into a familiar category, such as a performance measure like net income (NI). Two key factors may influence this assimilation process: the presentation format of the unrealized item and its direction (gain or loss).

We hypothesize that when unrealized items are presented in the income statement (e.g., changes in trading securities), investors are more likely to fully integrate them into the performance measure category, viewing them as part of the company's profitability. However, when these items are presented in OCI (e.g., changes in available-for-sale securities), the assimilation into the performance measure category is more difficult due to investors' limited familiarity with OCI. Additionally, we hypothesize that the direction of the unrealized item will moderate this effect: the natural tendency toward loss aversion may cause investors to more readily incorporate unrealized losses into their assessments of profitability compared to unrealized gains.

We conducted a 2×2 experiment manipulating the presentation at two levels: NI presentation (unrealized items from trading securities included in net income) and OCI presentation (unrealized items from available-for-sale (AFS) securities included in OCI). Two hundred and forty nonprofessional investors participated in our online study. We focused on investors' perceptions of value relevance, including their price-to-earnings (P/E) multiple judgments, to investigate the judgment process (Jones and Smith 2011; Maines and McDaniel 2000). Our findings reveal that the degree of incorporation of unrealized gains into valuation judgments is significantly lower (indicated by lower P/E multiple judgments) when the gains are presented in OCI compared to when they are presented net income (NI). This suggests that investors perceive gains reported in OCI as less value-relevant than those reported in NI. However, for unrealized losses, the degree of incorporation did not vary between OCI and NI presentations, indicating that investors dislike unrealized losses regardless of where they are reported.

Our study contributes to the existing literature in several key ways. First, it complements archival research on the value relevance of Other Comprehensive Income (OCI)

(Jones and Smith 2011). Since net income (NI) and OCI are often presented together in the same Comprehensive Income (CI) statement, it is difficult to isolate their individual effects on investors' valuation decisions using archival data. By employing an experimental approach, we can directly compare how investors respond to information from both NI and OCI, providing clearer insights into their distinct impacts on valuation judgments.

Next, our study extends previous experimental research on the decision usefulness of OCI (Du et al. 2015; Du et al. 2024) by offering direct evidence of how unrealized gains and losses affect investor behavior when presented in different formats. We find that unrealized losses influence investors' decisions consistently, whether they are reported in OCI or NI. However, the impact of unrealized gains is more pronounced when they are included in NI rather than OCI, highlighting how the reporting location affects investors' valuation judgments.

Our study also contributes to research on the effects of categorization and presentation formats in financial reporting (Hirst and Hopkins 1998; Hopkins 1996). We find that unrealized gains influence valuation judgments differently depending on whether they are classified in net income (NI) or Other Comprehensive Income (OCI). This highlights the significant role that presentation formats play in shaping how investors interpret financial information and make decisions.

2. Literature Review

Both the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) require firms to disclose Other Comprehensive Income (OCI). Firms can report OCI in one continuous statement, the statement of Comprehensive Income, or in two separate but consecutive statements, per ASC 220 and IAS 1. Comprehensive Income (CI) encompasses both net income (NI) and OCI, where OCI captures revenues, expenses, gains, and losses excluded from NI. Items within OCI include unrealized gains and losses on available-for-sale securities, cash flow hedges, asset revaluations, minimum pension liability adjustments, and foreign currency translation adjustments.

Unlike net income, which reflects a company's operational performance, OCI captures changes in the fair value of specific assets and liabilities, often representing unrealized gains or losses driven by external market factors (Bratten et al. 2016; Chisnall 2001). While net income is more directly linked to core business operations, OCI includes fair value adjustments, management estimates, and actuarial assumptions. Despite these distinctions, accounting standards require both NI and OCI to be presented within a performance-based Comprehensive Income (CI) statement, implying that OCI reflects a firm's overall financial performance. However, it remains uncertain whether investors perceive OCI to be as decision-useful as net income, given its link to unrealized and often temporary market changes.

The usefulness of OCI remains debated, as OCI gains and losses often arise from volatile market conditions, which can limit their ability to predict future cash flows and firm value (Bamber et al. 2010; Barker 2004; Chambers et al. 2007; Linsmeier et al. 1997; Yen et al. 2007). Researchers typically evaluate OCI's usefulness in terms of value relevance, persistence (its ability to predict its own future values), and predictive value for forecasting financial outcomes (Ohlson 1999).

Empirical evidence on the usefulness of OCI is mixed. Kanagaretnam et al. (2009) found that Comprehensive Income is more strongly associated with stock returns and future cash flows than net income. However, Dhaliwal et al. (1999) reported conflicting results, with net income showing a stronger association. Jones and Smith (2011) found that while the value relevance of OCI gains and losses is smaller than that of net income, OCI demonstrates stronger predictive value for forecasting future net income and cash flows. Similarly, Bratten et al. (2016) reported that unrealized gains and losses from available-for-sale securities and derivatives are significantly related to future earnings. Although OCI is often viewed as transitory, research shows that OCI gains and losses exhibit negative persistence, meaning they tend to partially reverse over time (Easton and Zhang 2017;

Jones and Smith 2011). This reversal complicates assessments of OCI's long-term predictive value but suggests that OCI can still provide useful information for forecasting future financial performance.

The mixed findings from archival studies suggest that the market struggles to interpret signals from Other Comprehensive Income (OCI), which is unsurprising given the lack of a clear conceptual distinction between net income (NI) and OCI under U.S. GAAP and IFRS. The mixed-attribute model present in current accounting standards leads to inconsistent treatment of similar economic transactions, whereas some changes in the fair value of assets and liabilities are recognized in NI others are reported in OCI. For instance, under GAAP (ASC 320 and ASC 815), unrealized gains and losses on available-for-sale securities and cash flow hedge derivatives are reported in OCI, whereas those on trading securities and fair value hedge instruments are included in NI. Meanwhile, unrealized gains and losses on securities intended to be held to maturity are typically not recognized in either NI or OCI. ASU 2016-01 adds further complexity by making significant changes to the accounting for equity investments that were previously classified as available-for-sale (AFS). While unrealized gains and losses on available-for-sale securities were previously reported in OCI, ASU 2016-01 now requires these gains and losses to be included in net income. This shift can significantly impact reported earnings, making it harder for investors to compare financial performance across periods or between companies. These inconsistencies can obscure the true economic reality of a company's financial situation. As a result, investors may find it challenging to fully understand the implications of OCI items, leading to inconsistent valuation and investment decisions.

Experimental studies often investigate how the presentation of Other Comprehensive Income (OCI) affects the judgments of financial statement users, including financial analysts and individual investors. Research suggests that the format in which OCI is presented can improve transparency, enabling users to better assess firm performance when OCI is included in a performance statement (Hirst and Hopkins 1998). Hirst and Hopkins (1998) found that buy-side financial analysts were more effective at detecting earnings management through the selective sale of available-for-sale (AFS) securities when Comprehensive Income was reported in a performance-based statement, which also improved their evaluations of stock price and financial reporting quality.

Maines and McDaniel (2000) provided experimental evidence that nonprofessional investors often struggle to interpret OCI and that the presentation format significantly affects their valuation judgments. Du et al. (2015) showed that participants assigned greater importance to OCI in a single-statement format compared to a two-statement format, particularly when the entity incurred an economic loss. More recently, Du et al. (2024) found that financial analysts were sensitive to the direction of OCI, with unrealized gains or losses affecting their valuation judgments based on the company's profitability. However, none of these studies directly examine how investors value unrealized gains or losses reported in OCI versus in net income (NI).

3. Hypothesis Development

Accounting research on format effects is grounded in categorization theory, which posits that the way information is categorized influences judgments (Clor-Proell et al. 2016; Hopkins 1996; Maines and McDaniel 2000). This categorization process aids individuals in assimilating new information into familiar categories, thereby reducing cognitive load by organizing concepts into meaningful groups. This organization allows individuals to apply prior knowledge to infer characteristics of new items within those groups (Schwarz and Bless 1992; 2007). Furthermore, prior psychological research highlights the significant role of emotional responses in influencing information processing and assimilation. For instance, Lerner et al. (2004) found that emotions such as anger, fear, and sadness can alter the weight assigned to different pieces of information based on emotional context, impacting how individuals assimilate and categorize new information. Similarly, Isen (2001) demonstrated that positive emotions can enhance creative problem-solving and

broaden cognitive flexibility, facilitating more effective assimilation of new information into existing categories.

In accounting, the categorization of an item significantly influences its perceived importance. For example, Hopkins (1996) found that analysts' stock price judgments for hybrid financial instruments varied based on whether the instrument was classified as debt or equity on the balance sheet. Analysts relied on their existing knowledge of these categories to evaluate the unfamiliar instruments. However, there is scant research on the categorization of unrealized gains and losses. Understanding how these items are classified could illuminate their impact on investors' judgments. If items included in OCI are viewed as equally robust as those in net income (NI), investors may attribute similar value relevance to OCI transactions.

Despite being of an unrealized nature, unrealized gains or losses from marketable securities are classified differently, either in OCI or NI, depending on managers' intentions to hold or sell these assets. Drawing on psychological and accounting research on categorization, we propose that investors process new information by assimilating it into a familiar category, such as a performance measure like net income (NI).

We argue that the lack of a clear conceptual definition of OCI complicates investors' ability to form a coherent mental model of it. When a non-core activity item, such as an unrealized gain or loss from AFS securities, is reported in OCI, investors may find it difficult to interpret this information due to their limited familiarity with OCI. As a result, they are less likely to assimilate these items into performance measures like net income (NI). In contrast, when the same item is presented in the income statement, such as an unrealized gain or loss from trading securities, investors, who are more accustomed to the income statement format, can more readily incorporate it into their evaluation of the company's financial performance.

Prior psychological research underscores the impact of emotional responses on assimilating financial information, demonstrating that emotions significantly shape investor decisions. This emotional framing influences how investors process information: negative emotions heighten sensitivity to unrealized losses, while positive emotions facilitate the integration of unrealized gains into valuations. Loss aversion indicates that losses elicit stronger negative emotions than gains, leading to more intense reactions to potential losses (Kahneman and Tversky 1979; Fochmann et al. 2017). This heightened sensitivity may result in a greater incorporation of unrealized losses, regardless of whether they appear in net income (NI) or Other Comprehensive Income (OCI) (Schwarz and Bless 1992; 2007). In contrast, unrealized gains generally trigger weaker emotional responses, prompting more rational assessments that consider the reporting location of unrealized items and the distinctions between OCI and NI. This asymmetry affects how gains and losses are evaluated and informs the following hypotheses:

H1. *Nonprofessional investors will provide higher P/E multiples for a company when an unrealized gain is included in net income than when it is included in Other Comprehensive Income.*

H2. *Nonprofessional investors will assign the same P/E multiples to a company regardless of whether an unrealized loss is reported in net income or Other Comprehensive Income.*

In addition to value relevance, OCI's decision usefulness is often centered on four other dimensions, persistence (ability to predict future values of itself), predictive value (forecasting relevance), management effectiveness, and investment risk (Maines and McDaniel 2000; Ohlson 1999). Based on prior research, we also evaluate OCI's judgment impact on predictability, persistency, risk, and management effectiveness perceived by nonprofessional investors. We expect that judgments differ across presentation formats, but we do not make any specific prediction.

4. Methods

4.1. Participants

We recruited 240 individual participants from Amazon's Mechanical Turk (MTurk), all based in the U.S. Each participant completed the task in exchange for a payment of USD 0.50. Amazon's Mechanical Turk (AMT) is an internet labor market where "workers" complete "Human Intelligence Tasks" (HITs) for compensation (Farrell et al. 2014). Prior accounting studies have used Mechanical Turk participants to proxy for nonprofessional investors (Rennekamp 2012; Rennekamp et al. 2015). We believe our participants' knowledge level is sufficient for the experimental task (Libby et al. 2002), which has low complexity (Elliott et al. 2007) and only requires the participants to have some limited knowledge of accounting. On average, our participants have about 12 years of working experience and 5 years of investment experience. Sixty eight are female and one hundred twelve are male. One hundred sixteen participants have at least an undergraduate degree, twenty-seven have at least a graduate degree and thirty-seven have at least high school degree.

4.2. Procedure and Task

We ask participants to assume the role of an investor who is interested in investing in a particular company. Before starting the survey, all participants are required to answer three questions. They can continue to the survey page only if they answer all questions correctly. The three questions are as follows: (1) If a company has a total revenue of USD 5000 and a total expense of USD 3000, how much is its net income?; (2) if a company has a total assets of USD 10,000 and liabilities of USD 6000, how much is its equity?; and (3) if a company has a net income of USD 7000 and Other Comprehensive Income of USD 2000, how much is its total Comprehensive Income? This allowed us to screen out participants who did not have the basic accounting knowledge to evaluate financial statements.

Next, participants are presented with some background information about a mid-sized manufacturing company, TRX, and asked to evaluate how the company recognizes unrealized gains or losses related to investment. Specifically they are told that "Due to positive cash flow in recent years, TRX's management has decided to invest extra cash in the financial market by purchasing marketable securities. During 2017 the market value of these investments fluctuate significantly". Then, participants proceed to review the company's Comprehensive Income statement and answer additional questions.

We randomly assigned the participants to the four experimental conditions. By randomly assigning participants to the four experimental conditions, we ensure that each participant has an equal chance of being placed in any group. This method helps to eliminate selection bias and ensures that the groups are comparable at the start of the experiment. Random assignment enhances the internal validity of the study by ensuring that differences in outcomes can be attributed to the experimental conditions rather than pre-existing differences among participants.

4.3. Independent and Dependent Variables

The experiment is structured with a 2×2 between-subject design. The two variables are presentation and direction. We designed an experiment where we manipulate how an unrealized gain or loss (UGL) is presented. Under the mixed-attribute model currently prescribed by GAAP, some changes in fair value estimates of assets and liabilities are included in net income, and other changes are included in OCI. Unrealized gains and losses on AFS securities are included in OCI but unrealized gains and losses on trading securities are included in NI, similar to realized gains or losses (ASC 320 and ASC 851). We omitted the holding intention of the management from the instrument.

The variable of presentation is manipulated at two levels: NI format including UGL from trading securities and OCI format including UGL from available-for-sale (AFS) securities. The variable of direction is manipulated as an unrealized gain or an unrealized loss. We hold operating income constant in all four conditions at USD 88,000. We vary the amount of the unrealized gain or loss and the format by including them either above or

below the line of net income to create four experimental conditions.[1] Appendix A includes a copy of the instrument.

We focus our investigation on investors' perception of value relevance. We also examine additional judgments related to predictability, persistency, management effectiveness, and risk. We measure valuation judgment using the first question "Firms in the same industry as TRX have historically had trailing P/E multiples ranging from 10 to 20 times reported net income. Please select a P/E multiple between 10 and 20 with the knowledge that, all else equal, higher P/E multiples result in higher stock prices" (Drag the slider from 10 to 20). Perceived predictability is measured by the second question: "Please determine the strength of TRX's future financial performance (or overall financial health, including earnings and cash flow in the future) (from 1 being very weak to 11 very strong)". The third question measures perceived persistence of the unrealized gain/loss and states: "Please indicate how long it takes for the unrealized gains/losses related to TRX's investment to be realized as net income (net loss) in the future" (from 1 being in the near future to 11 being in the far future)". The fourth question states "Please rate the effectiveness of TRX's management at managing its operation (from 1 being not effective at all to 11 very effective)". The last question states: "Please rate the risk of investing in TRX's stock (from 1 very low risk to 11 very high risk)". In addition, we obtain demographic information from the participants, such as gender, education level, and working/investment experience.[2]

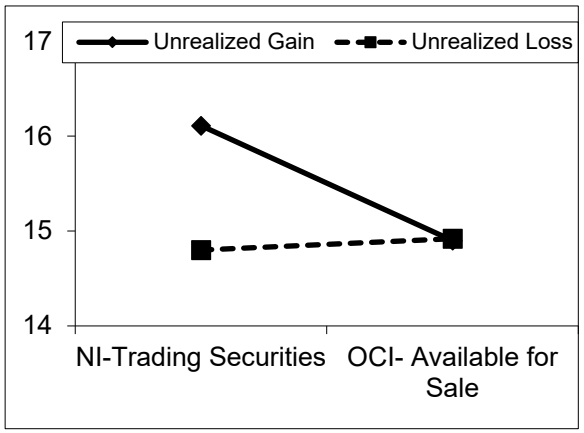
5. Results

In the experiment, we elicited five judgments, perception of value relevance, predictability, persistency, risk judgment, and management effectiveness. The means of these judgments are plotted in Figure 1. To ensure these judgments are unique and do not capture the same underlying construct, we conduct a reliability test. The Cronbach alpha coefficient, which measures the consistency among these five variables is 0.57, suggesting that each measure captures a relatively unique aspect of the investment judgment (Nunnally 1978; Peterson 1994). We therefore analyze the effect of our independent variables on each measure separately. For each variable, we conduct a 2×2 analysis of variance (ANOVA).

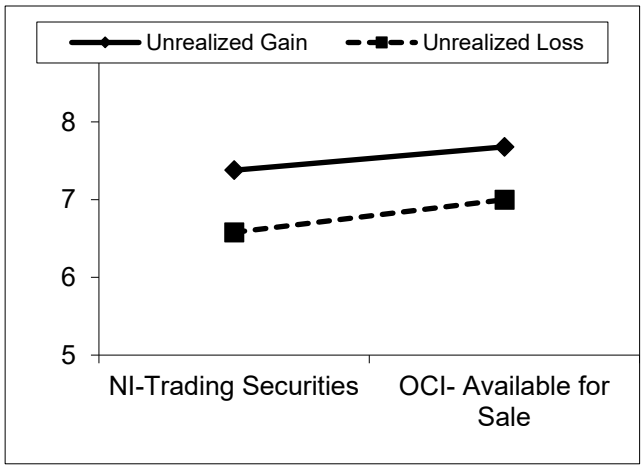
We utilize two methods for our analysis: ANOVA and contrast coding, both of which are commonly used for analyzing experimental results in accounting research. ANOVA (analysis of variance) is a statistical method that compares the means of three or more groups to determine if there are significant differences between them (Montgomery 2019). It is efficient for simultaneously comparing the four groups in our experiment and helps identify where and how strong the differences are. Contrast coding, on the other hand, is a statistical technique used to test specific hypotheses about the differences between group means. When a specific pattern of cell means is predicted, contrast coding allows for direct testing of these predictions by creating contrasts, which are linear combinations of the group means (Buckless and Ravenscroft 1990; Guggenmos et al. 2018).

Panel A is related to the judgment of future performance. Participants are ask to determine the strength of TRX's future financial performance (or overall financial health, including earnings and cash flow in the future) (1 being very weak, 11 being very strong). Panel B is related to the perceived persistence of unrealized gain/loss. Participants are asked to indicate how long it takes for the unrealized gains related to TRX's investment to be realized as net income in the future" (1 being in the near future, 11 being in the far future). Panel C is related to the judgments about management effectiveness. Participants are asked to rate the effectiveness of TRX's management at managing its operation (1 being in effective at all, 11 being very effective). Panel D is related to risk judgments. Participants are asked to rate the risk of investing in TRX's stocks (1 being very low risk, 11 being very high risk).

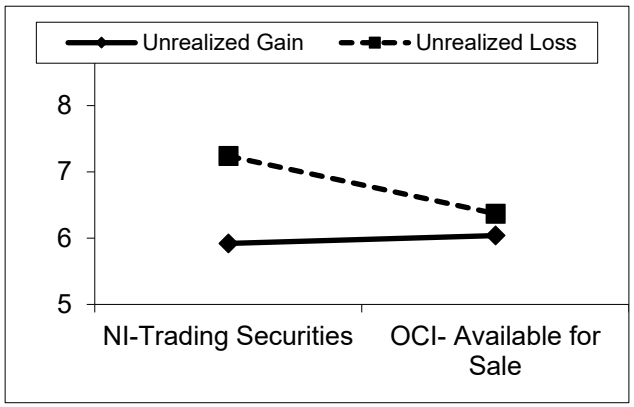
Panel (**A**): P/E Multiple Judgments



Panel (**B**): Predictability Judgments

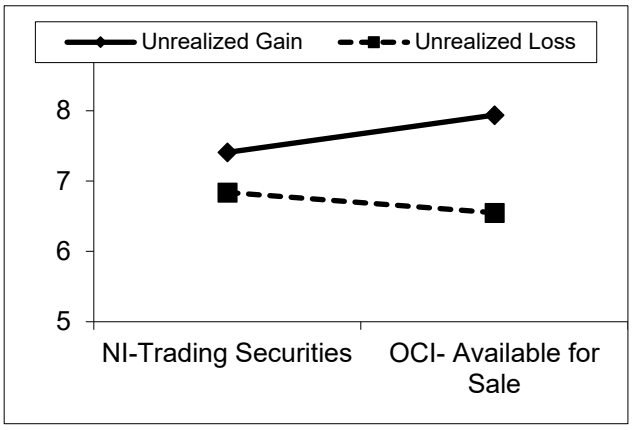


Panel (**C**): Persistency Judgments



Panel (**D**): Management Effectiveness.

Figure 1. *Cont.*



Panel (**E**): Risk Judgments.

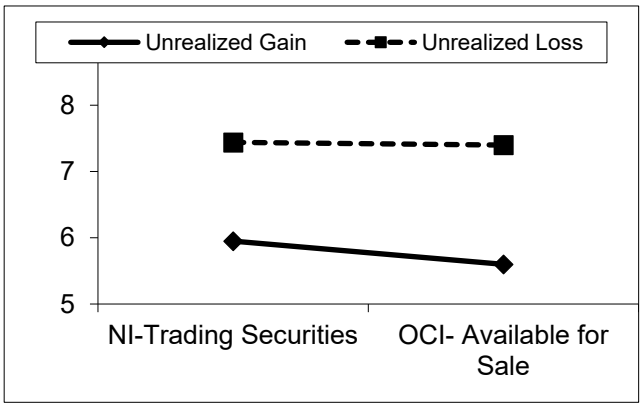


Figure 1. Judgments of decision usefulness.

5.1. Test of Hypotheses

Descriptive statistics for participants' perceived P/E judgments are provided in Table 1, Panel A. We conducted an analysis of variance (ANOVA). As expected, we find a significant main effect of gain/loss (F (1,175) = 3.38, $p < 0.05$, one-sided). On average, participants provided higher P/E multiples when the company's investment resulted in an unrealized gain (mean of 15.51) compared to an unrealized loss (14.86). This suggests that participants react to the direction of unrealized items and recognize the differential economic impact between unrealized gains and losses. We did not observe a significant effect of NI vs. OCI presentation, but we observed a marginally significant interaction between independent variables (F (1,175) = 3.60, $p = 0.06$).

This table presents the means (std) for valuation judgment. Participants are asked to select a P/E multiple between 10 and 20 with the knowledge that, all else equal, higher P/E multiples result in higher stock prices by dragging the slider from 10 to 20. They are also told that "Firms in the same industry as TRX have historically had trailing P/E multiples ranging from 10 to 20 times reported net income".

Our hypotheses, in essence, predict an ordinal interaction between presentation and direction, and a main effect of direction. Because we predict a specific pattern of cell means, contrast coding is the most appropriate and most powerful means of testing our hypotheses (Buckless and Ravenscroft 1990; Guggenmos et al. 2018). Consistent with our predictions, our specific contrast weights are as follows: +3 in the NI/unrealized gain condition (A), −1 in the OCI/unrealized gain condition (B), −1 in the NI/unrealized loss condition (C), and −1 in the OCI/unrealized loss condition (D). With these contrast codes, we not only test for a main effect between the unrealized gain and unrealized loss conditions (which is shown in the conventional analysis of variance) but also a specific type of interaction effect of gain/loss and presentation. The first two weights reflect our expectation that participants would incorporate unrealized gain more easily when it is included in the net

income than Other Comprehensive Income. The next two weights provide evidence that the incorporation of unrealized losses does not differ across presentation forms. The same value we assigned to the second and third weights indicates that investors are indifferent about the direction of OCI items because of a lack of prior knowledge of OCI. We assigned a lower average weight in the OCI than in the NI condition because we expect that investors react to the presentation format and thus integrating OCI is more difficult than NI.

Table 1. P/E multiple judgments.

Panel A: Means (Standard Deviation) for P/E			
	NI-Trading Securities	OCI-Available for Sale	Row Means
Unrealized Gain	16.11 (1.58) N = 37	14.90 (2.76) N = 50	15.51
Unrealized Loss	14.80 (2.40) N = 55	14.92 (2.30) N = 38	14.86
Column Means	15.46	14.91	

Panel B: Analysis of Variance Results				
Source	df	MS	F	*p*-value
Direction (Unrealized Gain or Loss)	1	18.10	3.38	0.07
Presentation (OCI or NI)	1	12.91	2.41	0.12
Presentation X Direction	1	19.30	3.60	0.06
Error	175	5.01		

Panel C: Residual Between-Cells Variance Test				
Source	df	MS	F	*p*-value
[+3, −1, −1, −1] Contrast	1	44.56	8.311	0.00
Residual between-cells variance	2	0.56	0.10	0.90
Total between-cells variance	3	15.23	2.84	0.04
Error	176	5.36		
Contrast effect size, r2	98%			

Pane D: Simple Effects				
		Mean Diff.	**t**	***p*-value**
Unrealized Gain	NI vs. OCI	1.28	2.45	0.02
Unrealized Loss	NI vs. OCI	−0.12	−0.25	0.81
NI	Unrealized Gain vs. Loss	1.31	2.71	0.01
OCI	Unrealized Gain vs. Loss	−0.02	−0.04	0.97

Table 1, Panel C presents the results of the hypothesized contrast. We find that the contrast is significant (F (1,176) = 8.31, *p*-value = 0.00), which is consistent with our main and interaction effect predictions. Further, our (r^2) calculation of the effect size indicates that our planned contrast explains 98% of the between-cells variation in our P/E measure, with the residual variation not captured by the planned contrast being insignificant (F (1,176) = 0.10, p = 0.90). Taken together, these results indicate that our planned contrast adequately explains the variation in our measure (Guggenmos et al. 2018).

Table 1, Panel D presents the simple effects tests. We find that there is a significant difference between P/E judgments across presentation formats in the unrealized gain condition (t = 2.45, p = 0.02). Specifically, the higher P/E judgment in the NI presentation condition suggests that an unrealized gain is easier to incorporate into net income than it is

in the OCI presentation condition, which supports H1. In the unrealized loss condition, the P/E judgments do not differ across the presentation formats (t = −0.25, $p = 0.81$). Consistent with H2, this evidence suggests that participants are not sensitive to the presentation format facing unrealized loss, potentially due to the general tendency of loss aversion.

In summary, our experimental results suggest that investors can differentiate between the impacts of Other Comprehensive Income (OCI) and net income (NI) when the unrealized item is positive, assigning higher valuations when the unrealized gain is included in NI rather than OCI. However, when it comes to unrealized losses, investors do not distinguish between OCI and NI, as their judgments remain consistent across both conditions. Investors generally dislike unrealized losses, assigning lower valuations to these losses regardless of whether they are included in NI or OCI.

5.2. Additional Analysis

In this section, we discuss other aspects of OCI decision usefulness and judgments related to predictability, persistency, management effectiveness, and risk. The descriptive statistics of these judgments are presented in Table 2, and the ANOVA results are presented in Table 3. First, we examine the perceived predictability. Participants are asked to determine the strength of TRX's future financial performance (or overall financial health, including earnings and cash flow in the future) on an eleven-point scale (from 1 being very weak to 11 being very strong). The descriptive statistics are presented in Table 2, Panel A. We find a significant main effect of gain/loss (F (1,175) = 6.05, $p = 0.02$), but the main effect of NI vs. OCI presentation and the interactions between these two factors are not significant (See Table 3, Panel A). As expected, participants predicted higher future performance when the company's investment results in an unrealized gain (mean of 7.53) than when it results in an unrealized loss (6.79). Table 2, Panel B presents the means (std) for perceived persistence. Participants are asked to indicate the length of time it takes for the unrealized gains or losses related to TRX's investment to be realized as net income in the future (from 1 being in the near future to 11 being in the far future) on an eleven-point scale. The ANOVA shows that the main effect of gain/loss is significant (F (1,175) = 2.56, $p = 0.02$) but none of the other effects are significant (see Table 3, Panel B). It appears that participants believe that it takes longer for an unrealized loss compared to an unrealized gain to be realized into real gain and loss. Panel C presents the means (std) for management's effectiveness in managing its operation. The ANOVA shows a significant main effect of gain and loss (F (1,175) = 10.36, $p = 0.00$), as participants deem management more effective when the company has an unrealized gain than a loss. None of the other effects are significant. Panel D presents the means (std) for the risk of investing in TRX's stock (from 1 being very low risk to 11 being very high risk). The ANOVA shows a significant main effect of the direction of the unrealized gain or loss. Therefore, the participants judge the investment risk significantly higher when there is an unrealized loss (mean = 7.42) compared to an unrealized gain (5.72).

Table 2 presents the means (std) for other judgments. Panel A is related to the judgment of future performance. Participants are asked to determine the strength of TRX's future financial performance (or overall financial health, including earnings and cash flow in the future) (1 being very weak, 11 being very strong). Panel B is related to the perceived persistence of an unrealized gain/loss. Participants are asked to indicate how long it takes for the unrealized gain related to TRX's investment to be realized as net income in the future (1 being in the near future, 11 being in the far future). Panel C is related to the judgments about management effectiveness. Participants are asked to rate the effectiveness of TRX's management at managing its operation (1 being not effective at all, 11 being very effective). Panel D is related to the risk judgments. Participants are asked to rate the risk of investing in TRX's stocks (1 being very low risk, 11 being very high risk).

Table 2. Other judgments related to OCI (means (standard deviation)).

Panel A: Judgments about Future Performance (Predictability)			
	NI-Trading Securities	OCI-Available for Sale	Row Means
Unrealized Gain	7.38 (1.63) N = 37	7.68 (1.73) N = 50	7.53
Unrealized Loss	6.58 (2.39) N = 55	7.00 (1.95) N = 38	6.79
Column Means	6.98	7.34	
Panel B: Judgments about Realization of Unrealized Gain/Loss (Persistency)			
Unrealized Gain	5.95 (2.50) N = 37	6.04 (2.27) N = 50	6
Unrealized Loss	7.24 (2.26) N = 55	6.37 (2.24) N = 38	6.81
Column Means	6.6	6.21	
Panel C: Management Effectiveness Judgments			
Unrealized Gain	7.41 (1.79) N = 37	7.94 (1.71) N = 50	7.71
Unrealized Loss	6.84 (2.23) N = 55	6.55 (2.23) N = 38	6.72
Column Means	7.13	7.25	
Panel D: Risk Judgments			
Unrealized Gain	5.95 (2.03) N = 37	5.60 (1.73) N = 50	5.77
Unrealized Loss	7.44 (2.17) N = 55	7.40 (1.88) N = 38	7.42
Column Means	6.7	6.5	

Table 3 presents the ANOVA for other judgments. Panel A is related to the judgment of future performance. Participants are asked to determine the strength of TRX's future financial performance or overall financial health, including earnings and cash flow in the future (1 being very weak, 11 being very strong). Panel B is related to the perceived persistence of unrealized gain/loss. Participants are asked to indicate how long it takes for the unrealized gains related to TRX's investment to be realized as net income in the future" (1 being in the near future, 11 being in the far future). Panel C is related to the judgments about management effectiveness. Participants are asked to rate the effectiveness of TRX's management at managing its operation (1 being not effective at all, 11 being very effective). Panel D is related to the risk judgments. Participants are asked to rate the risk of investing in TRX's stocks (1 being very low risk, 11 being very high risk).

In addition, we collect data on self-insights in the post-experimental questions about the weights assigned for NI, OCI, and CI when participants evaluate the case (the total must add up to 100%). The averages show that participants assigned a much higher weight for net income (mean = 50%) than Other Comprehensive Income (mean = 24%) and Comprehensive Income (mean = 26%). For net income, a two-way ANOVA shows no other effects except for a main effect of unrealized gain and loss ($F(1,176) = 6.78$, $p = 0.01$), suggesting that participants assigned more weight to net income when there is an unrealized gain (mean = 54%) compared to a loss (mean = 47%). None of the effects are significant for the weights related to Other Comprehensive Income.

Moreover, we ask two questions related to self-knowledge about OIC and UGA on an 11-point scale. The ratings on self-knowledge on both items are quite low. The mean (std) of knowledge about Other Comprehensive Income is 4.56 (2.69), and the mean of

unrealized gains and losses related to investments is 4.47 (2.62). They do not vary across all four experimental conditions. This supports our conjecture that nonprofessional investors have limited knowledge about OCI.

In summary, the results of the additional analysis suggest that participants have limited knowledge about OCI and do not appear to have a good understanding of OCI in terms of its decision usefulness related to predictability, persistency, management effectiveness, and risk.

Table 3. ANOVA results for other judgments related to OCI.

Panel A: Judgments about Future Performance (Predictability)				
Source	df	MS	F	*p*-value
Direction (Unrealized Gain or Loss)	1	23.82	6.05	0.02
Presentation (OCI or NI)	1	5.66	1.44	0.23
Presentation X Direction	1	0.15	0.04	0.85
Error	175	3.4		
Panel B: Judgments about Realization of Unrealized Gain/Loss (Persistency				
Direction (Unrealized Gain or Loss)	1	12.84	2.56	0.02
Presentation (OCI or NI)	1	2.45	0.49	0.27
Presentation X Direction	1	7.14	1.42	0.17
Error	175	5.03		
Panel C: Management Effectiveness Judgments				
Direction (Unrealized Gain or Loss)	1	41.82	10.36	0
Presentation (OCI or NI)	1	0.69	0.17	0.68
Presentation X Direction	1	7.32	1.81	0.18
Error	175	3.46		
Panel D: Risk Judgments				
Direction (Unrealized Gain or Loss)	1	117.92	30.59	0
Presentation (OCI or NI)	1	1.64	0.43	0.52
Presentation X Direction	1	1.01	0.27	0.61
Error	175	3.86		

6. Conclusions

This study examines how investors incorporate unrealized gains or losses reported in Other Comprehensive Income (OCI) into their investment judgments. Since unrealized gains or losses can be presented in either OCI or net income—gains from trading securities are included in net income, while those from available-for-sale securities are reported in OCI (ASC 320 and ASC 851)—it raises the question of whether OCI items are perceived as equally significant as net income items. To explore this, we conducted a 2 × 2 experiment with 240 nonprofessional investors, manipulating the presentation of unrealized items in either net income or OCI. Our findings reveal that unrealized gains are valued significantly lower when presented in OCI compared to net income, indicating that investors see OCI-reported gains as less relevant. However, for unrealized losses, the incorporation degree remained consistent across both presentations, reflecting a general aversion to unrealized losses regardless of how they are reported.

Our study's results highlight the limited understanding that individual investors have regarding the economic significance of Other Comprehensive Income (OCI). This points to a need for accounting standard setters to enhance guidance on OCI, improve disclosures, and provide better educational resources for individual investors. The findings suggest that clearer and more consistent reporting of OCI is essential. Standard setters may need to

revise existing standards to better communicate OCI's economic importance and require improved disclosures. Additionally, preparers should consider how the presentation format of OCI and net income affects investors' perceptions and find ways to clarify OCI's relevance. Developing educational materials or sessions could also help investors better understand OCI and its significance.

Our study has several limitations. First, we infer that investors do not perceive OCI gains as being as value-relevant as net income (NI) gains because their price-to-earnings (P/E) judgments are lower for the OCI treatment. Second, we focus solely on unrealized holding gains and losses on available-for-sale and trading securities, which limits our ability to generalize findings to other OCI items, such as gains and losses from foreign currency transactions or pension adjustments. Future research should investigate a broader range of OCI items. Third, we maintain a positive operating income, which may affect how OCI is interpreted; the impact of unrealized gains or losses could differ if a company is experiencing operating losses. Fourth, we must consider alternative explanations for our results, such as the realization principle, which suggests that investors assign a higher value to recognized gains, and the conservatism convention, where investors account for losses regardless of realization. Future studies should aim to eliminate these potential explanations. Lastly, we assume that the unrealized gains or losses from trading and available-for-sale securities have the same economic effects without specifying management intentions regarding holding the market securities. Participants did not differentiate between reversal dates in our experiment, suggesting that this assumption is reasonable, but future research should explore these effects in other contexts.

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Appendix A

Please assume the role of an investor. Your task is to evaluate the following company.

TRX, Ltd. (the "Company") is a mid-sized specialty manufacturer of tools and is headquartered in the Midwestern U.S. The Company ships first-rate tools to carpenters, contractors, production facilities, and fabricators across North America. Due to positive cash flow in recent years, TRX's management has decided to invest extra cash in the financial market by purchasing marketable securities. During 2017, the market value of these investments fluctuates significantly.

Please assess the impact of unrealized gain (loss) related to TRX's investment in marketable securities.

The financial market has posted strong gains (losses) in 2017. TRX's investments in marketable securities are classified as trading securities (available-for-sale securities) and the valuation has gone up (down) by USD 60,000. In accordance with the General Accepted Accounting Principles (GAAP), investments are adjusted to their current market value at the end of each year. A change in value is recognized as unrealized gain (loss) and included in "Net Income" ("Other Comprehensive Income"). In 2017, the company had USD 60,000 in unrealized gains (loss) from trading securities recognized in "Net Income" ("Other Comprehensive Income").

Condition One: Net Income and Unrealized Gain (NI-GAIN) from Trading Securities

Statement of Comprehensive Income			
For Year Ended 31 December 2017			
Revenues	USD 550,000		
Cost of Goods Sold	−USD 400,000		
Gross Profit		USD 150,000	
Selling, general and administrative expenses	−USD 50,000		
Income from operations		USD 100,000	
Interest revenue	USD 10,000		
Income before income tax		USD 110,000	
Income tax	−USD 22,000		
Net income		USD 88,000	
Other comprehensive income			
Unrealized gain from available for sale securities	USD 60,000		
Income tax	−USD 12,000		
Other comprehensive income		USD 48,000	
Comprehensive income			USD 136,000
Earnings per share		USD 0.88	
Shares outstanding		100,000	

The income tax rate is 20%.

Condition Two: Other Comprehensive Income and Unrealized Gain (OCI-Gain) from Available-for-Sale Securities

Statement of Comprehensive Income			
For Year Ended 31 December 2017			
Revenues	USD 550,000		
Cost of Goods Sold	−USD 400,000		
Gross Profit		USD 150,000	
Selling, general and administrative expenses	−USD 50,000		
Income from operations		USD 100,000	
Unrealized gain from trading securities	USD 60,000		
Interest revenue	USD 10,000		
Income before income tax		USD 170,000	
Income tax	−USD 34,000		
Net income		USD 136,000	
Other comprehensive income			
Other comprehensive income		USD 0	
Comprehensive income			USD 136,000
Earnings per share		USD 1.36	
Shares outstanding		100,000	

The income tax rate is 20%.

Condition Three: Net Income with Unrealized Loss (NI-Loss) from Trading Securities

Statement of Comprehensive Income			
For Year Ended 31 December 2017			
Revenues	USD 550,000		
Cost of Goods Sold	−USD 400,000		
Gross Profit		USD 150,000	
Selling, general and administrative expenses	−USD 50,000		
Income from operations		USD 100,000	
Interest revenue	USD 10,000		
Income before income tax		USD 110,000	
Income tax	−USD 22,000		
Net income		USD 88,000	
Other Comprehensive Income			
Unrealized loss from available for sale securities	−USD 60,000		
Income tax	USD 12,000		
Other Comprehensive Income		−USD 48,000	
Comprehensive income			USD 40,000
Earnings per share		USD 0.88	
Shares outstanding		100,000	

The income tax rate is 20%.

Condition Four: Other Comprehensive Income with Unrealized Loss (OCI-Loss) from Available-for-Sale Securities

Statement of Comprehensive Income			
For Year Ended 31 December 2017			
Revenues	USD 550,000		
Cost of Goods Sold	−USD 400,000		
Gross Profit		USD 150,000	
Selling, general and administrative expenses	−USD 50,000		
Income from operations		USD 100,000	
Unrealized loss from trading securities	−USD 60,000		
Interest revenue	USD 10,000		
Income before income tax		USD 50,000	
Income tax	−USD 10,000		
Net income		USD 40,000	
Other Comprehensive Income			
Other Comprehensive Income		USD 0	
Comprehensive income			USD 40,000
Earnings per share		USD 0.40	
Shares outstanding		100,000	

The income tax rate is 20%.

Notes

[1] We hold income from operations at USD 100,000 across all four conditions. In addition, in the unrealized gain (loss) conditions, we hold Comprehensive Income constant at USD 136,000 (USD 40,000) across both presentation conditions. In the OCI condition, the unrealized gain (loss) of USD 60,000 is listed as available for sale and included in the OCI. In the NI condition, the unrealized gain (loss) of USD 60,000 is listed as trading securities and included in the net income. For the unrealized gain, in the NI condition, an unrealized gain from trading securities of USD 60,000 is added to the NI, resulting in an NI after tax of USD 136,000. There is no OCI, and the total CI is equal to USD 136,000. In the OCI condition, an unrealized gain from AVF of USD 60,000 is included in the OCI, and thus, the NI after tax remains USD 88,000. The OCI before tax is USD 60,000, and the CI is USD 136,000. For the unrealized loss, in the NI condition, an unrealized loss from trading securities of USD 60,000 is subtracted from the net income, resulting in an NI after tax of USD 40,000. There is no OCI, and the CI is equal to USD 40.000. In the OCI condition, an unrealized loss from AVF of USD 60,000 is subtracted from the OCI, and thus, the NI remains USD 88,000. The OCI is negative USD 48,000 after tax, and the CI is equal to USD 40,000.

[2] We include two manipulation check questions. First, we ask participants to select the unrealized gain or loss that describes TRX's investment in market securities. Second, they must select net income or Other Comprehensive Income to describe the placement (treatment) of the unrealized gain/loss related to TRX's investment in market securities. Fifty-three participants failed to answer both questions correctly and were excluded from the analysis. In addition, we include an attention check question, "Please select "Yes" if you are a Robot, otherwise select "No". Seven participants failed the question and werealso excluded from the data set.

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