**Journal of Accounting, Business and Finance Research**
ISSN: 2521-3830
Vol. 17, No. 1, pp. 10-21, 2023
DOI: 10.55217/102.v17i1.681

# Reporting comprehensive income and firms' earnings management

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## Abstract

This study investigates the impact of reporting comprehensive income and other income through performance or equity statements on firms' earnings management through the selective sale of available-for-sale (AFS) securities. The objective is to explore how Canadian firms can improve transparency by altering managers' accounting behavior by switching from equity statements to income statements. The study used a difference-in-differences method in a quasi-experimental framework. The results showed that negative net income and post-period net income in performance statements can reduce realized gains and losses. Available-for-sale securities also affect these gains and losses in performance and equity statements. Single statement adopters only smooth earnings when net income is positive or when available-for-sale gains are large enough to offset negative earnings. Income statement (IS) adopters reduced earnings smoothing more than other treatment firms. Managers with less job security were found to be more likely to engage in earnings smoothing, and earnings smoothing decreased more during the pre-to-post period. Equity incentives reduced the tendency to smooth earnings, particularly in treatment firms with CEOs whose pay is more sensitive to stock price changes. Treatment firms outperform control firms in predicting future earnings using realized gains and losses on AFS securities per share. The findings suggest that firms manage earnings less effectively by selectively selling AFS securities when comprehensive income (CI) or other comprehensive income (OCI) is presented in performance statements. Firms win when earnings management is reduced because it reduces the informativeness of realized gains and losses on AFS securities. Managers will use more earnings management strategies as long as they have incentives.

**Keywords:**
*Available-for-sale securities*
*Comprehensive income*
*Earnings management*
*Performance statement.*

**JEL Classification:**
*G38; M41.*



**Publisher:**
*Scientific Publishing Institute*

**Received:** *25 January 2023*
**Revised:** *3 July 2023*
**Accepted:** *7 August 2023*
**Published:** *23 August 2023*

**Funding:** This study received no specific financial support.
**Institutional Review Board Statement:** Not applicable.
**Transparency:** The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
**Data Availability Statement:** Zhang Wei may provide study data upon reasonable request.
**Competing Interests:** The author declares that there are no conflicts of interests regarding the publication of this paper.

## 1. Introduction

A statement of comprehensive income is a financial document that encompasses all variations in equity over a given timeframe, with the exception of those arising from contributions made by proprietors and payouts to proprietors. A financial statement comprises both net income and other comprehensive income (OCI)[1] (Ikuo, Kamiya, & Kawanishi, 2016). According to accounting standards, OCI is recognized in an income statement and its value relevance is enhanced when it is disclosed in a more visible and transparent section of the financial statement (Steve, Donel, Changjiang, & Ya-Wen, 2018). Notwithstanding, academics who oppose the inclusion of OCI in financial statements contend that its components are prone to exhibiting a higher degree of temporary earnings and may result in inaccuracies in projected earnings (Heejin, 2018). The provision of pertinent information for the prediction of forthcoming cash flows is facilitated by comprehensive income, albeit with a higher degree of measurement error compared to net income for extended periods (Vera & Simone, 2017). The adoption of a more comprehensive income reporting approach leads to financial reporting that is more informative (Maryam Naghsh & Azlina, 2017). The findings of the study indicate that OCI, whether used as a singular measure or as distinct components, does not possess substantial prognostic potential with regard to future performance (Katarzyna, Magdalena, & Małgorzata, 2019). The incorporation of a requirement to produce a comprehensive income statement should be deemed significant in enhancing the utility of financial reports (Przemysław, Piotr, & Michał, 2019).

The term "comprehensive income reporting" refers to the section of a company's financial statement that details not only the net income but also the "other comprehensive income" items. Comprehensive income gives appropriate information that can be utilized to predict future cash flows, despite the fact that the measurement error associated with it is greater than that associated with net income for longer lags of time (Vera & Simone, 2017). The preparation of a Statement of Comprehensive Income, which is part of the move toward reporting income in a more comprehensive manner, ultimately results in financial reporting that is more informative (Maryam Naghsh & Azlina, 2017). On the other hand, a number of studies have come to the conclusion that there is no evidence to support the hypothesis that the explanatory power of total comprehensive income is greater than that of net income (Heejin, 2018). Users of financial statements, according to those who advocate for comprehensive income reporting, will be able to make more informed decisions concerning the future performance of their companies as a result of the implementation of comprehensive income reporting (Ahmet, 2015). The incorporation of comprehensive income into the system of financial reporting led to an increase in the amount of information that was publicly available and made it possible for joint-stock companies to conduct more precise financial analyses (Artur, 2020).

The existing literature has not reached a definitive agreement on the impact of displaying comprehensive income (CI)[2] in the performance statements as opposed to equity statements in mitigating bank earnings management through the utilization of realized gains and losses on available-for-sale (AFS) securities. Several studies have indicated that banks employ the realized gains and losses on AFS securities to even out their earnings and regulate their regulatory capital. Furthermore, the degree of income smoothing and capital management is more pronounced in banks that have accumulated realized gains and losses (Peterson, 2019). Moreover, in cases where accounting standards provide protection for earnings against unrealized fluctuations in security fair values, the predominant method of earnings management that takes place is the periodic sale of gains to augment low earnings or surpass the zero earnings benchmark (John & Burks, 2020). In addition, it has been observed that banks utilize their discretion in determining the debt valuation adjustment in order to mitigate fluctuations in earnings (Minyue, Doukakis, & Ryan, 2023). On the other hand, several scholarly investigations have proposed that loan loss provisions are employed by banks to regulate earnings (Benjamin, 2018; Brian, Causholli, & Myers, 2020; Desta, 2017; Jamal, 2018; Peterson, 2022) and that non-interest revenue, including commission and fee income, is similarly utilized to manipulate reported earnings (Peterson, 2017; Peterson & Erick, 2019a). In general, the extant literature indicates that the management of bank earnings is a multifaceted matter that encompasses diverse determinants. Moreover, there is no conclusive proof that the disclosure of CI in the performance statements, as opposed to equity statements, mitigates the manipulation of bank earnings through the recognition of realized gains and losses on available-for-sale securities.

## 2. Review of Literature

### *2.1. Managing Earnings through the Selective Sale of the Available-For-Sale (AFS) Securities*

One strategy used by firms to manipulate reported earnings is through selective sales of available-for-sale (AFS) securities. AFS securities are sold as part of this strategy in order to generate gains or losses, either of which can be put toward meeting earnings targets or smoothing out earnings fluctuations. According to the findings of some research (e.g., Weijia, Lu, & Xiaojun, 2023), firms that have a greater proportion of accrual earnings management have a tendency to smooth earnings to a higher degree through the use of AFS securities. However, it seems that the purpose of some of these gain-selling transactions at the lower end of

[1] Other comprehensive income (OCI) includes gains or losses on available-for-sale securities, gains or losses on foreign currency translation, costs or credits on prior pension service and gains or losses on a pension plan.
[2] CI includes OCI and net income.

the earnings distribution is not to create a smooth path toward earnings but rather to manage reported earnings so that they go from negative to positive (John & Burks, 2020). The manipulation of sales, production, and expenses are all components of real earnings management (Xin-Tu & Honghua, 2019). It has also been documented that real earnings management can be used to improve short-term performance in order to satisfy the demands placed on a company by analysts (Irani & Oesch, 2016). Other earning assets, such as AFS securities, generate income from fees and commission (Casu, Ferrari, Girardone, & Wilson, 2016). Other earning assets include assets with a higher yield. There is a correlation between the net unrealized gains or losses on AFS investment securities and future earnings (Joonil, Lee, Choi, & Kim, 2020). However, because insiders have the ability to artificially inflate or deflate the earnings of their firms, it is impossible for any other investor to make money through a transaction with an insider (Gârleanu, Panageas, & Yu, 2015). The effects of the recently implemented rule to remove the Accumulated Other Comprehensive Income (AOCI)[3] filter on the earnings management behavior of banks through the use of strategic sales of AFS securities have also been documented (Zhao & Deis, 2020).

### *2.2. Reporting Position of Accounting Information and the Efficient Market Hypothesis (EMH)*

Under the EMH, the informativeness of the accounting information should be unaffected by its reporting position. According to this hypothesis, all of the information that is currently available has already been incorporated into stock prices, so investors are unable to reliably forecast future stock returns. Because of this, any new information that is disclosed ought to be instantly reflected in the stock prices, and the market ought to be efficient. This hypothesis is supported by a number of studies, the most notable of which are Bismark and Appiah (2018); Lisa, Miranda-Lopez, and Tama-Sweet (2015) and Rafrini and Asriyal (2013). On the other hand, there are other studies that have found anomalies that support this hypothesis, such as Gemici (2020) and Chun-Teck, Ng, Lim, and Gan (2021). In general, the efficient market hypothesis continues to be a contentious and intensively researched topic in the field of accounting studies.

### *2.3. Comprehensive Income Reporting and Incomplete Revelation Hypothesis*

According to the incomplete revelation hypothesis, companies that exhibit lower levels of performance may strategically employ readability in their disclosures as a means of concealing unfavorable outcomes (Bernhard, 2022). Conversely, advocates of comprehensive income reporting contend that it substantially enhances the transparency of financial statements revealed by corporations (Ahmet, 2015).

Scholarly investigations have also been conducted regarding the significance of comprehensive income in terms of its value relevance. Louis, Hodgson, and Russell (2018) discovered that comprehensive income holds less value relevance compared to net income, irrespective of the reporting location. Nevertheless, an alternative study by Maryam Naghsh and Azlina (2017) demonstrated that the transition toward all-encompassing income disclosure by means of the creation of a Statement of Comprehensive Income leads to financial reporting that is more enlightening.

A scholarly investigation examined the impact of comprehensive income reporting on corporate performance by scrutinizing the influence of corporate governance practices on financial performance, gauged by comprehensive income. The study revealed a favorable effect (Eva, María-Del-Mar, & Samuel, 2018). According to Merve and Semra (2017), investors perceive the financial information contained in comprehensive income to be more volatile, risky, transitory, and incomplete compared to net income, which leads to a decline in stock price.

### *2.4. Comprehensive Income Reporting and Limited Attention Theory*

When it comes to comprehensive income reporting, the limited attention theory suggests that users may not fully comprehend or incorporate the impact of unrealized gains or losses and other comprehensive income items into their evaluations (Heejin, 2018). This could be because the theory suggests that users may not pay enough attention to the information. Users may overlook or underestimate the significance of the items that comprise comprehensive income when making financial decisions (Joonil et al., 2020). This is due to the fact that comprehensive income includes items that are not immediately realized or cash-based.

### *2.5. Income Statements and Consecutive Statements Methods versus Equity Statements of Comprehensive Income*

Two methods for organizing the presentation of financial data in financial statements are the income statement method and the consecutive statements method. Both of these methods focus on the income statement. The income statement method starts with the income statement and then moves on to the statement of comprehensive income, which includes OCI items. The income statement and the statement of comprehensive income are treated as two distinct documents by the consecutive statements method. On the other hand, items pertaining to OCI are included in the statement of changes in shareholders' equity, which is part of the equity statements of comprehensive income.

Steve et al. (2018) and Xin, Haiyan, and Meiting (2019) have shown that the manner in which OCI items are presented in an income statement or a statement of comprehensive income can have an effect on the value

[3] AOCI represents the cumulative total of all the items in OCI over time.

relevance of those items. The disclosure in the income statement, on the other hand, is essential because it notates the profit or loss in addition to the source of income and the nature of expenses (Nassr Saleh Mohamad & Daw, 2015). This information is important because it allows for better decision making. According to Yananto (2019), one of the most important aspects of financial reporting is the preparation of financial statements. These statements include the balance sheet, income statement, statement of changes in financial position, notes, and other reports. According to Matthias, Christian, and Steven (2019), the income statement can also be used to estimate the costs of research and development for firms.

### *2.6. CI and OCI in the Performance Reporting Method versus the Equity Reporting Method*

Two distinct approaches can be employed to report comprehensive income (CI) and other comprehensive income (OCI), namely the performance reporting method and the equity reporting method. The Income Statement under the performance reporting method and the Changes in Shareholders' Equity statement under the equity reporting method are two distinct financial approaches that present CI and OCI differently. Specifically, the former method shows CI and OCI in the income statement, whereas the latter method presents them in shareholders' equity statements.

Empirical research has indicated that the value relevance and utilization of OCI by financial analysts is contingent upon the location of its reporting. According to Xin et al. (2019), the value relevance of the performance statement can be significantly enhanced by disclosing OCI. According to Federated Investors Inc., the implementation of a perpetual statement of comprehensive income may lead to confusion among the primary users of financial statements. This confusion may arise due to the reduced presentation of key performance measurements, such as net income and earnings per share (Philipp & Lisa, 2015).

It is recommended that net income and comprehensive income be distinctly delineated as individual components of financial statements, wherein OCI serves as the connecting factor that harmonizes the two components (Ikuo et al., 2016). In 2011, the CI statement was established as the prevailing financial statement format, which incorporated the inclusion of OCI (Heejin, 2018).

Research has indicated that the impact of OCI on returns is more pronounced when OCI is disclosed in equity as opposed to the income statement (Marhaendra, Zuhroh, Assih, & Candrarin, 2021). Nevertheless, a scholarly investigation by Ahmet (2015) revealed that comprehensive income does not exhibit superior predictive power with regard to future corporate performance when compared to net income.

The OCI category, a constituent of comprehensive income, necessitates an examination of a company's gains and losses stemming from all its operations, irrespective of their position in the financial reporting structure (Artur & Tomasz, 2018).

Conclusively, the value relevance and utilization of financial analysts can be influenced by the reporting location of CI and OCI. Enhancing the value relevance of the performance statement can be achieved by disclosing OCI. However, presenting a perpetual statement of comprehensive income may lead to perplexity among the principal users of financial statements. The incorporation of the OCI category in the equity reporting methodology necessitates a comprehensive evaluation of a firm's financial gains and losses ascending from its diverse operations.

### *2.7. Managerial views on Performance Reporting versus Equity Statement Reporting of CI and OCI*

There is no clear consensus among managers regarding whether they prefer performance reporting or equity statement reporting of CI and OCI. This is based on the references that are available. Some research suggests that managers who are given strong incentives to manage earnings are more likely to avoid reporting OCI in a performance statement (Steve et al., 2018), while other research has found inconclusive evidence on the value relevance of OCI when it is reported in the statement of equity as opposed to in a performance statement (Philipp & Lisa, 2015). The International Accounting Standards (IAS) allow for the possibility of using more than one method to accommodate the equitable financial reporting of assets managed by a company (Slobodan et al., 2017). According to the findings of a number of studies, managers who have access to more substantial equity-based incentives but have less stable employment are significantly less likely to use performance-based reporting (Xin et al., 2019).

## 3. Research Design

Realized gains or losses (RGL) on AFS securities are compared to pre-tax profits to determine if earnings are being managed through AFS investments in the primary tests. Equation 1 presents the earnings smoothening behavior of the firms that is estimated by β:

$$RGL_{i,t} = \beta NIBR_{i,t} + ControlVariables + FirmFixedEffects \quad (1)$$

RGL is the realized gains or losses on the AFS securities, while NIBR is net income before taxes and unusual items. Both are scaled by quarter-starting assets. Barth, Gomez-Biscarri, Kasznik, and López-Espinosa (2017); Beatty and Harris (1999); Dong, Ryan, and Zhang (2014); Dong and Zhang (2018) and Lee, Petroni, and Shen (2006) all agree that the selective sale of available-for-sale securities capture earnings smoothing when β is negative and significant:

$$RGL_{iq} = \beta_1 NIBR_{iq} + \beta_2 Treat \times NIBR_{iq} + \beta_3 POST \times NIBR_{iq} + \beta_4 Treat \times POST \times NIBR_{iq} + \beta_5 POST + \beta_6 Treat \times POST + ControlVariables + FirmFixedEffects \quad (2)$$

In accordance with the methodology used by Barth et al. (2017), this study incorporates nine control variables to account for the various factors that influence RGL, namely SIZE, SEC, Cash, UL, UG, RegCap, TED, VIX, and Unemp. In order to mitigate the potential for firms to engage in regulatory capital ratio manipulation, the end-of-quarter capital ratio (RegCap) controls this study.

The controls for the beginning of the quarter include the accumulated unrealized gains and losses on available-for-sale (AFS) securities, denoted as UG and UL, respectively. It is anticipated that the variables of UG and UL will have a positive predictive effect on RGL during the upcoming period. Cash is incorporated as a measure to regulate the liquidity asset level of the firm. The security level, encompassing held-to-maturity, available-for-sale, and trading securities, is subject to regulation by the Securities and Exchange Commission (SEC).

The deflation of Cash, UL, UG, and SEC is performed by dividing their values by the total value of the assets at the start of the quarter. The variable SIZE is responsible for regulating the natural logarithm of the total assets at the beginning of a quarter. In order to account for macroeconomic variables, a proxy was incorporated for the implied volatility of options on the S&P 500 index, commonly referred to as the VIX proxy. A proxy was also included for the TED spread, which is the difference between the three-month (LIBOR) and T-bill rates of interest. According to Barth et al. (2017), there is additional evidence indicating that financial institutions with a negative net income are more prone to engaging in significant write-offs, as opposed to maintaining a consistent earnings pattern.

It is crucial to distinguish the act of decreasing realized gains to yield a big bath, which results in a positive β value, from the commonly observed behavior of earnings smoothing in order to maintain the integrity of financial reporting. As per Barth et al. (2017), the firms were categorized based on their positive and negative net incomes before realized gains or losses (NIBR). PosiNI (NegNI) = NIBR if (NIBR) is non-zero, otherwise 0. Therefore, the main analysis involves the estimation of Equation 2 using quarterly data.

$$RGL_{iq} = \beta_1 PosiNI_{iq} + \beta_2 NegNI_{iq} + \beta_3 Treat * PosiNI_{iq} + \beta_4 Treat * NegNI_{iq} + \beta_5 POST * PosiNI_{iq} + \beta_6 POST * NegNI_{iq} + \beta_7 Treat * POST * PosiNI_{iq} + \beta_8 Treat * POST * NegNI_{iq} + \beta_9 RegCap_{iq} + \beta_{10} UG_{iq-1} + \beta_{11} UL_{iq-1} + \beta_{12} Cash_{iq} + \beta_{13} SEC_{iq} + \beta_{14} SIZE_{iq} + \beta_{15} TED_{q} + \beta_{16} VIX_{q} + \beta_{17} Unemp_{q} + \beta_{18} POST + \beta_{19} Treat * POST + FixedEffects \quad (3)$$

Equation 3 specifies separate earnings smoothing behaviors of firms with positive NIBR from those with negative NIBR.

Positive (negative) $\gamma_7$ ($\gamma_8$) indicates the expectation that income statement (IS) adopters will be involved in less selective selling of AFS securities than others.

If the CEO is also the chairman of the board of directors, then J_Security is 1, otherwise it is 0. In a similar vein, if the percentage of outside directors serving on the board of the company is below the sample median, then J_Security is 1. Additionally, LowSecur = 1, if J_Security = 0, and 0 otherwise. A CEO's equity increase is calculated as follows: Equity-Inc = ONEPCT / [ONEPCT + SALARY + BONUS], where 1% (ONEPCT) is a dollar increase or decrease in the value of the CEO's option and stock holdings due to a 1% increase or decrease in the firm's stock price. The study by Core and Guay (2002) serves as the foundation upon which the option's delta is built. Chief Executive Officer (CEO) compensation is indicated by SALARY and BONUS.

$$RGL_{iq} = \gamma_1 PosiNI_{iq} + \gamma_2 NegNI_{iq} + \gamma_3 ISadopter \times PosiNI_{iq} + \gamma_4 ISadopter \times NegNI_{iq} + \gamma_5 POST \times PosiNI_{iq} + \gamma_6 POST \times NegNI_{iq} + \gamma_7 ISadopter \times POST \times PosiNI_{iq} + \gamma_8 ISadopter \times POST \times NegNI_{iq} + ControlVariables + FixedEffects \quad (4)$$

Equation 4 estimates the earnings smoothing behavior of the treatment firms that switched reporting position from equity statements to income statements.

High-EI = 1 is used if the firm's Equity-Inc is above the 75th percentile of the sample in Equation 5.

$$RGL_{iq} = \delta_1 PosiNI_{iq} + \delta_2 NegNI_{iq} + \delta_3 LowSecur \times PosiNI_{iq} + \delta_4 LowSecur \times NegNI_{iq} + \delta_5 POST \times PosiNI_{iq} + \delta_6 POST \times NegNI_{iq} + \delta_7 LowSecur \times POST \times PosiNI_{iq} + \delta_8 LowSecur \times POST \times NegNI_{iq} + ControlVariables + FixedEffects \quad (5)$$

Equation 5 measures the change in the sale of AFS securities by treatment firms whose CEOs have lower job security compared with the other treatment firms. If the CEOs have less job security than at other firms, as indicated by a positive $\delta_7$ and a negative $\delta_8$. a greater decrease is anticipated in the selective sales of AFS securities. As shown by the positive (negative) $\theta_7$ ($\theta_8$), it is anticipated that firms with greater equity-based compensation incentives will reduce selective sales of AFS securities more than other firms. Equation 6 is constructed to estimate this as follows:

$$RGL_{iq} = \theta_1 PosiNI_{iq} + \theta_2 NegNI_{iq} + \theta_3 High\_EI \times PosiNI_{iq} + \theta_4 High\_EI \times NegNI_{iq} + \theta_5 POST \times PosiNI_{iq} + \theta_6 POST \times NegNI_{iq} + \theta_7 High\_EI \times POST \times PosiNI_{iq} + \theta_8 High\_EI \times POST \times NegNI_{iq} + ControlVariables + FixedEffects \quad (6)$$

## 4. Sample Selection

The sample consists of Canadian firms that are traded on multiple stock exchanges, including the American Stock Exchange (ASE), the New York Stock Exchange (NYSE), and the National Association of Security Dealers and Quotation (NASDAQ). These companies are all listed on the Toronto Stock Exchange as a component of the TSE 300 index. The sample period runs from 2010 to 2014 and the sample size consists of 1,207 observations after sample adjustment due to the use of lagged variables and some missing values on the components of comprehensive income.

## 5. Results and Discussion

### *5.1. Reporting Position of CI/OCI and Selective Sales of Available-for-Sale Securities*

The results given in Table 1 were obtained by estimating Equation 3. These results indicate that NegNI, PosiNI, POST*PosiNI, POST*NegNI, Treat*POST*NegNI and SIZE have a negative and significant effect on RGL. Therefore, it can be concluded that these variables have a substantial impact on RGL and should be taken into consideration when analyzing and predicting RGL in the future. Existing literature also supports the current study's results. For instance, with respect to the negative and significant effect of NegNi on RGL, Antonius Bryan Leonardo and Hastuti (2022) found that negative net income can have a negative effect on RGL. Additionally, negative net income can also lead to an increase in liabilities that have an impact on equity (Titi & Hari, 2022). Furthermore, the negative and significant impact of POST*PosiNI on RGL is supported by Yiting and Qi (2020), who found that market pricing of incremental CI volatility was enhanced after the Accounting Standards Update (ASU) for non-financial firms, which were forced to switch from equity to performance statements. Therefore, the negative effect of the interaction term of POST*PosiNI on realized gains and losses can be attributed to the change in reporting position of CI to performance from equity statements, which affects the market pricing of incremental CI volatility.

Earlier studies also reported the effect POST*NegNI on RGL. For instance, according to Yiting and Qi (2020), negative post-period net income in performance statements may have a negative effect on realized gains and losses in performance statements compared to equity statements. Additionally, Mostafa, Husain, and Jassem (2019) found that reporting other comprehensive income gains and losses as income statement items reduces the valuation model's explanatory power and earnings' incremental information content. However, there is no direct evidence that negative post-period net income in performance statements has a negative effect on realized gains and losses in performance statements compared to equity statements.

Moreover, the significantly negative effect of Treat*POST*NegNI on RGL is also supported by the previous studies, for example, Md Farhan, Mahmud, and Faisal (2019) and Zainul and Rosita (2021). However, one study by Cao (2022) did not find any significant changes in the big bath behavior of treatment firms when compared to control firms, using either the whole or the matched sample. Finally, available-for-sale (AFS) securities can have an impact on both realized gains and losses in the performance statements and equity statements of Canadian firms. However, the SIZE of AFS securities may negatively affect realized gains and losses in performance statements. According to Weijia et al. (2023), firms tend to smooth their earnings using AFS securities only when their net income is positive or when the gains from AFS securities are significant enough to offset negative earnings. This positive effect of unrealized losses is consistent with the findings of previous studies. For instance, Heejin (2018) found that UL has a positive effect on realized gains and losses in performance statements compared to equity statements. Factors that have a statistically insignificant impact on RGL are Treat*PosiNI, Treat*NegNI, Treat*POST*PosiNI, RegCap, UGiq1, Cash, SEC, TED, VIX, Unemp, POST, and Treat*POST. Among these, the negative coefficient of Treat*PosiNI suggests that treatment firms demonstrate greater earnings smoothing via selective sales of AFS securities in the pre-period than control firms do. However, the coefficient is statistically insignificant, indicating that this finding is not consistent with the results obtained by Cao (2022) and Dong and Zhang (2018). Similarly, the positive $\beta_7$ reflects that the treatment firms reduced earnings smoothing using selective AFS sales from the pre-period to the post-period when controlled for time trend factors with the control firms, but this coefficient is also insignificant. Moreover, the positive and insignificant value of the coefficient of Treat*NegNI is consistent with the result obtained by Cao (2022).

### *5.2. Cross-Sectional Analyses with Treatment Firms*

The estimation output is provided in Table 2, in which Panel A shows that PosiNI has a significant and negative effect on RGL. Existing literature supports this negative impact, for example, positive net income (PosiNI) has been found to have a significant but negative effect on realized gains or losses (RGL) (John & Burks, 2020). This negative effect on RGL is consistent with firms' use of earnings smoothing by adjusting securities sales (John & Burks, 2020; Minyue et al., 2023). In this case, NegNI has a positive and significant effect on RGL. With respect to the positive impact of NegNI on RGL, Weijia et al. (2023) revealed that firms smooth earnings only when net income is positive or negative and AFS securities gains are large enough to offset negative earnings. POST*PosiNI also positively significantly affects RGL, and this result is consistent with earlier studies. For instance, Ajeng Ayu Wardhani and Nor (2021) also found a positive and significant effect of the interaction between post period and positive net income on realized gains and losses (RGL).

Importantly, the results indicate that ISadopter*POST*PosiNI significantly and positively affects RGL. This infers that IS adopters experienced a larger reduction in earnings smoothing than other treatment firms did in the Canadian industry. The effect of ISadopter on firm income smoothing has been the focus of several studies (Ana Carolina & Da Silva Macedo, 2018; Lisa, Miranda-Lopez, & Tama-Sweet, 2022; Peterson & Erick, 2019b; Peterson & Erick Rading, 2018; Uwalomwa, Emeni, Uwuigbe, & Ataiwrehe, 2016). Peterson and Erick (2019b), for instance, examined income smoothing in Nigerian firms after IS adoption and found evidence of reduced income smoothing among IS adopters.

**Table 1.** Reporting position of CI/OCI and selective sales of available-for-sale securities.

| Variable | Symbol | Whole sample | Entropy balance matched sample |
|---|---|---|---|
| | | Coefficient (T-stat) | Coefficient (T-stat) |
| PosiNIiq | $\beta_1$ | -0.55*** (-5.27) | -0.36*** (-5.02) |
| NegNIiq | $\beta_2$ | -0.61*** (-5.11) | -0.72*** (-3.86) |
| Treat*PosiNIiq | $\beta_3$ | -0.07 (-0.53) | -0.21 (-0.58) |
| Treat*NegNIiq | $\beta_4$ | 0.01 (0.51) | 0.05 (0.81) |
| POST*PosiNIiq | $\beta_5$ | -0.61** (-2.51) | -0.816** (-2.27) |
| POST*NegNIiq | $\beta_6$ | 0.67*** (4.21) | 0.81*** (4.61) |
| Treat*POST*PosiNIiq | $\beta_7$ | 0.25 (0.58) | 0.37 (0.55) |
| Treat*POST*NegNIiq | $\beta_8$ | -0.16*** (-5.13) | -0.28*** (-6.01) |
| RegCapiq | $\beta_9$ | -0.38 (-0.36) | -0.55 (-1.21) |
| UGiq1 | $\beta_{10}$ | 0.81 (0.19) | 0.71 (0.81) |
| ULiq1 | $\beta_{11}$ | 0.37*** (6.16) | 0.55*** (5.27) |
| Cashiq | $\beta_{12}$ | 0.66 (0.72) | -0.58 (-1.12) |
| SECiq | $\beta_{13}$ | -0.85 (-0.72) | -0.37 (-0.81) |
| SIZEiq | $\beta_{14}$ | -0.11** (-2.51) | -0.19** (-3.21) |
| TEDq | $\beta_{15}$ | 0.16 (0.33) | 0.71 (0.62) |
| VIXq | $\beta_{16}$ | 0.19 (0.73) | 0.55*** (6.27) |
| Unempq | $\beta_{17}$ | 0.31 (0.18) | 0.86*** (5.51) |
| POST | $\beta_{18}$ | 0.22 (0.36) | 0.81*** (5.06) |
| Treat*POST | $\beta_{19}$ | 0.52 (0.36) | 0.19 (1.19) |
| Firm fixed effects | | Yes | Yes |
| N | | 1,207 | 1,207 |
| Adj. R-squared | | 0.32 | 0.32 |

**Note:** ***, ** and * indicate significance at the 1%, 5%, and 10% levels, respectively.
The variables used in this table are: PosiNIiq (positive net income), NegNIiq (negative net income), Treat*PosiNIiq (positive net income of treatment firms), Treat*NegNIiq (negative net income of treatment firms), POST*PosiNIiq (post period positive net income), POST*NegNIiq (post period negative net income), Treat*POST*PosiNIiq (interaction effect of post period positive net income of teat banks), Treat*POST* NegNIiq (interaction effect of post period negative net income of teat banks), RegCapiq (end of quarter regulatory capital ratio), UGiq1 (unrealized gains), ULiq1 (unrealized losses), SECiq (securities), VIXq (implied volatility index), Unempq (unemployed rate), POST (post period), Treat*POST (treat firms in post period).

Panel B of Table 2 presents the estimation results obtained for Equation 5. Particularly, LowSecur*POST*PosiNI and LowSecur*PosiNI have significant positive and significant negative coefficients, respectively. The former finding indicates that in the pre-period, managers of the Canadian firms in positions with less job security were probably engaging in earnings smoothing, whereas the latter finding implies a

greater tendency toward earnings smoothing reduction during the transition from the pre-period to the post-period in comparison with managers who had a greater degree of job security. These findings are consistent with the results obtained by Cao (2022).

The results provided in Panel C of Table 2 (Equation 6) demonstrate that PosiNI and High_EI*PosiNI have a negative and significant effect on RGL, whereas POST*NegNI and High_EI*POST*PosiNIiq significantly and positively affect RGL. This implies that the reduction in the tendency to smooth earnings is more pronounced among the treatment firms, particularly the firms in which the CEO's remuneration is more responsive to fluctuations in stock prices. The coefficient of High_EI*POST*PosiNI was utilized to quantify the sensitivity, which was observed to be more pronounced in treatment firms exhibiting elevated levels of earnings volatility. This finding is also supported by previous literature. For example, according to Mijoo and Hwang (2019), in some firms with negative earnings, there are incentives to take big baths by realizing losses on securities sales, which is in contrast to smoothing behavior. The findings also imply that a reduction in earnings smoothing among treatment firms is predominantly influenced by firms that offer greater equity incentives in their managers' compensation plans, as indicated by the cumulative coefficients for POST*PosiNI and High_EI*POST*PosiNI. This finding is also supported by Mohammad and Al-Own (2019), who provide empirical evidence that the earnings management through discretionary loan loss provisions is associated with equity incentives in the industry, and executives with high equity incentives in European firms are found to manage reported earnings upward by reducing loan loss provisions.

**Table 2.** Cross-sectional analyses with treatment firms.

| **Panel A. Cross-sectional analyses with treatment firms: Single statement adopters** | | |
|---|---|---|
| **Variable** | **Symbol** | **Coefficient (T-stat)** |
| PosiNIiq | $\lambda_1$ | -4.27*** (-6.18) |
| NegNIiq | $\lambda_2$ | 0.58** (3.26) |
| ISadopter PosiNIiq | $\lambda_3$ | -4.82 (-0.38) |
| ISadopter NegNIiq | $\lambda_4$ | 0.31 (0.17) |
| POST PosiNIiq | $\lambda_5$ | 0.98** (1.08) |
| POST NegNIi | $\lambda_6$ | -0.18 (-0.71) |
| ISadopter POST PosiNIiq | $\lambda_7$ | 2.31*** (4.27) |
| Control variables & interaction | | Yes |
| Firm fixed effects | | Yes |
| N | | 1,207 |
| Adj. R-squared | | 0.28 |
| Panel B. Cross-sectional analyses with treatment firms: Job security | | |
| Variable | Symbol | Coefficient (T-stat) |
| PosiNIiq | $\delta_1$ | -4.36*** (-5.01) |
| NegNIiq | $\delta 2$ | -0.91 (-1.06) |
| LowSecur*PosiNIiq | $\delta 3$ | -3.31*** (-4.82) |
| LowSecur*NegNIiq | $\delta 4$ | 0.73 (0.62) |
| POST*PosiNIiq | $\delta 5$ | 0.53 (1.16) |
| POST*NegNIi | $\delta 6$ | -0.61*** (-1.41) |
| LowSecur*POST*PosiNIiq | $\delta 7$ | 2.08*** (3.91) |
| LowSecur*POST*NegNIi | $\delta 8$ | 1.13*** (1.24) |
| Control variables & interaction | | Yes |
| Firm fixed effects | | Yes |
| N | | 1,207 |
| Adj. R-squared | | 0.29 |
| Panel C. Cross-sectional analyses with treatment firms: Equity incentive | | |
| Variable | Symbol | Coefficient (T-stat) |
| PosiNIiq | $\varphi_1$ | -4.12*** (-5.21) |
| NegNIiq | $\varphi_2$ | -0.25 (-1.31) |
| High_EI*PosiNIiq | $\varphi_3$ | -3.28*** (-4.22) |
| High_EI*NegNIiq | $\varphi_4$ | 0.42 (0.27) |
| POST*PosiNIiq | $\varphi_5$ | -0.18 (-1.08) |
| POST*NegNIi | $\varphi_6$ | 0.38*** (1.27) |
| High_EI*POST*PosiNIiq | $\varphi_7$ | 2.26*** (3.61) |
| Control variables & interaction | | Yes |
| Firm fixed effects | | Yes |
| N | | 1,207 |
| Adj. R-squared | | 0.24 |

**Note:** *** and ** indicate significance at the 1% and 5% levels, respectively.

## 6. Additional Analyses

### *6.1. Reporting Position of CI/OCI and Income Informativeness Changes*

$$EPS_{iq+1}(EPS_{i3}) = \gamma_1 RGL_{iq} + \gamma_2 RGL_{ps_{iq}} + \gamma_3 UGL\_ps + \gamma_4 \text{Treat} \times \text{EPSi}_{iq} + \gamma_5 Treat \times RGL_{ps_{iq}} + \gamma_6 Treat \times UGL_{ps_{iq}} + \gamma_7 \text{POST} \times \text{EPSi}_{iq} + \gamma_8 \text{POST} \times RGL_{ps_{iq}} + \gamma_9 \text{POST} \times UGL_{ps_{iq}} + \gamma_{10} Treat \times \text{POST} \times \text{EPSi}_{iq} + \gamma_{11} Treat \times \text{POST} \times \text{RGL}_{\text{ps}_{iq}} + \gamma_{12} Treat \times \text{POST} \times \text{UGL}_{\text{ps}_{iq}} + \gamma_{13} Treat_{iq} + \gamma_{14} POST + \gamma_{15} Treat \times POST + ControlVariables \quad (7)$$

Equation 7 was used to determine whether or not the reporting position of CI/OCI affects how realized gains and losses on AFS securities per share (RGL_ps) predicts future short-term and long-term earnings. These future earnings are earnings per share before tax in quarter q+1 (EPSiq+1), and the sum of earnings per share before tax in quarters q+1 to q+3 (EPSi3). Total unrealized gains and losses per share (UGL_psiq) and earnings per share before gains and losses that have already been realized were examined (EPBRiq).

**Table 3.** Reporting position of CI/OCI and informativeness of earnings.

| Variable | Symbol | $EPS_{iq+1}$ | | $EPS_{is}$ | |
|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) |
| | | Coefficient (T-stat) | Coefficient (T-stat) | Coefficient (T-stat) | Coefficient (T-stat) |
| EPBR | $\varphi_1$ | 0.45*** (4.32) | 0.39*** (5.02) | 0.35*** (3.32) | 0.33*** (4.54) |
| RGL $ps_{iq}$ | $\varphi_2$ | 0.91*** (4.11) | 0.72*** (3.89) | 0.92*** (3.22) | 0.65*** (3.73) |
| UGL_$ps_{iq}$ | $\varphi_3$ | 0.07 (0.53) | 0.21 (0.48) | 0.07 (0.53) | 0.28 (0.37) |
| Treat*$EPS_{iq}$ | $\varphi_4$ | -0.01 (-0.41) | -0.05 (-0.81) | -0.02 (-0.32) | -0.05 (-0.72) |
| Treat*RGL $ps_{iq}$ | $\varphi_5$ | -0.91** (-2.41) | -0.816** (-2.27) | -0.92** (-2.32) | -0.722** (-2.27) |
| Treat*UGL_$ps_{iq}$ | $\varphi_6$ | 0.67 (0.21) | 0.81 (0.91) | 0.27 (0.22) | 0.72 (0.32) |
| POST*$EPS_{iq}$ | $\varphi_7$ | 0.25 (0.58) | 0.37 (0.44) | 0.25 (0.57) | 0.37 (0.33) |
| POST*RGL_$ps_{iq}$ | $\varphi_8$ | -0.16*** (-5.13) | -0.28*** (-6.01) | -0.22*** (-5.23) | -0.27*** (-2.02) |
| POST*UGL_$ps_{iq}$ | $\varphi_9$ | -0.38 (-0.36) | -0.54 (-1.21) | -0.37 (0.32) | -0.53 (-2.22) |
| Treat*POST*$EPS_{iq}$ | $\varphi_{10}$ | 0.81 (0.29) | 0.71 (0.81) | 0.72 (0.29) | 0.72 (0.72) |
| Treat*POST*RGL $ps_{iq}$ | $\varphi_{11}$ | 0.37*** (6.19) | 0.44*** (5.27) | 0.37*** (2.29) | 0.33*** (5.27) |
| Treat*POST*UGL_$ps_{iq}$ | $\varphi_{12}$ | -0.69 (-0.72) | -0.48 (1.12) | -0.29 (-0.72) | -0.37 (-2.22) |
| $Treat_{iq}$ | $\varphi_{13}$ | 0.84 (0.72) | 0.37 (0.81) | 0.73 (0.72) | 0.37 (0.72) |
| POST | $\varphi_{14}$ | 0.11** (2.51) | 0.29** (3.21) | 0.22** (2.52) | 0.23** (3.22) |
| Treat*POST | $\varphi_{15}$ | -0.19 (-0.33) | -0.71 (-0.92) | -0.29 (-0.33) | -0.72 (-0.32) |
| UHGL_$ps_{iq-1}$ | $\varphi_{16}$ | --- | 0.45*** (6.32) | --- | 0.35*** (2.32) |
| $SIZE_{iq}$ | $\varphi_{17}$ | --- | 0.86*** (5.51) | --- | 0.72*** (5.52) |
| $MTB_{iq}$ | $\varphi_{18}$ | --- | 0.81*** (5.09) | --- | 0.72*** (5.03) |
| Intercept | | 0.03 | 0.02 | 0.01 | 0.06 |
| N | | 1,207 | 1,207 | 1,207 | 1,207 |
| Adj. R-squared | | 0.43 | 0.41 | 0.47 | 0.42 |

**Note:** *** and ** indicate significance at the 1% and 5% levels, respectively.
The variables used in the this table are: EPBR (earnings per share before tax before realized gains and losses on AFS securities), Treat*EPS (earnings per share of the treatment firms), Treat*RGL (realized gains and losses of the treatment firms), Treat*UGL (unrealized gains and losses of the treatment firms), POST*EPS (earnings per share in the post period), POST*RGL (realized gains or losses in the post period), POST*UGL (unrealized gains or losses in the post period), Treat*POST*EPS (earnings per share of the treatment banks in the post period), Treat*POST*RGL (realized gains and losses of the treatment banks in the post period), Treat*POST*UGL (unrealized gains and losses of the treatment banks in the post period), UHGL_ps (accumulated unrealized gains or losses on AFS securities per share), MTB (market-to-book value ratio).

The estimation results based on Equation 7 are presented in Table 3. These results show that RGL_$ps_{iq}$ is positive and significant, which suggests that RGL_ps predicts future earnings per share (EPS). Dong et al.

(2014) also achieved the same result. In the case of Canadian firms, the finding that Treat*RGL_ps has a negative and significant coefficient is important, thus it can be concluded that RGL_psiq has a higher predictive ability for future earnings in control firms compared to treatment firms. The coefficient of Treat *POST*RGL $ps_{iq}$ is positive and significant, which suggests that when compared to control firms, treatment firms display a significant improvement in RGL_psiq's ability to predict future earnings. This finding is also supported by the study conducted by Audrey Wen-Hsin, Hamid, and Joshua (2021).

## 7. Conclusion

The current study was designed to determine whether changing reporting comprehensive income and other comprehensive income to a performance statement from an equity statement reduces Canadian firms' earnings management through the selective sales of available-for-sale securities. The study has identified that negative net income can have a negative effect on realized gains and losses, and negative post-period net income in performance statements may have a negative effect on realized gains and losses in performance statements compared to equity statements. Moreover, AFS securities can have an impact on both realized gains and losses in performance statements and equity statements. But the SIZE of AFS securities may negatively affect realized gains and losses in performance statements. Hence, firms tend to smooth their earnings using AFS securities only when their net income is positive or when the gains from AFS securities are significant enough to offset negative earnings. This finding of a positive effect of unrealized losses is consistent with the findings of previous studies. Considering single statement adopters, it was observed that firms only smooth earnings when net income is positive or negative and available-for-sale securities gains are large enough to offset negative earnings. Additionally, IS adopters experienced a greater reduction in earnings smoothing than other treatment firms. Taking job security into account, the findings indicate that during the pre-period, managers in positions with less job security were more likely to engage in earnings smoothing. Furthermore, they have a greater tendency toward earnings smoothing reduction during the transition from the pre-period to the post-period in comparison to managers who had a greater degree of job security. Based on the equity incentive, what emerges from the results is that reduction in the tendency to smooth earnings is more pronounced among the treatment firms, particularly those with managers whose remuneration is more responsive to fluctuations in stock prices. Reduction in earnings smoothing among treatment firms is predominantly influenced by firms that offer greater equity incentives in their managers' compensation plans. Finally, when compared to control firms, treatment firms displayed a significant improvement in realized gains and losses on the ability of AFS securities per share to predict future earnings.

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