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The Usefulness of Other Comprehensive Income for Predicting Future Earnings*

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Abstract

This study investigates whether other comprehensive income (OCI) reported in the statement of comprehensive income (one of the main financial statements after the adoption of K-IFRS) predicts a firm's future performance. Using the quarterly data of Korean listed companies, we examine the association between OCI estimates and future earnings. First of all, we find that OCI is positively associated with earnings in both 1- and 2-quarter ahead, supporting the predictive value of OCI. When we break down OCI into its individual components, our results suggest that the net unrealized gains/losses on available-for-sale (AFS) investment securities are positively associated with future earnings, while the other components (e.g., net unrealized gains/losses on valuation of cash flow hedge derivatives) present insignificant results. In addition, we investigate whether the reliability in OCI estimates enhances the predictive value of OCI to predict future performance. We find that the predictive ability of OCI, in particular the net unrealized gains/losses on available-for-sale (AFS) investment securities, becomes more pronounced when firms are audited by the Big 4 audit firms. Overall, our study suggests that information content embedded in OCI can provide decision-useful information that is helpful for the prediction of future firm performance.

Keywords: Other Comprehensive Income, Future Earnings, Fair Values, Available-for-sale Securities

JEL Classification Code: G18, M40, M41, M49.

1. Introduction

Accounting income, the difference between revenues and expenses, represents a firm's operating performance, helps assess firm value and predicts future performance (Asgari, Salehi, & Mohammadi, 2014; Shirzad, Mohammadi, & Haghighi, 2015).

Concerning the measurement and the reporting of accounting income in a financial statement, there has been a debate between the 'all-inclusive (i.e., comprehensive)' and 'current operating performance' perspectives of income. Proponents of the 'all-inclusive' view or 'comprehensive' income have argued that all factors, except those from transactions with owners, should be incorporated in measuring accounting income while the opponents have argued that income should abstract from transitory effects or any factors not related to operations to reflect only 'current operating performance'.

Prior studies have attempted to forecast a firm's future performance in various perspectives (He, 2018; Agustina & Pramana, 2019; Mukherjee & Sen, 2019; Lim, 2019; Oh & Ki, 2020; Nam, 2019). In this study, we examine whether other comprehensive income (OCI) are being incrementally useful over net income for predicting future performance. Moreover, we break down OCI into its components and investigate the usefulness of its components to predict future performance. Our study aims to provide implication on whether the disclosure of OCI following the adoption of the Korean International Financial Reporting Standards

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(K-IFRS) provides decision-useful information that assists in the prediction of future performance.

Many investors are very concerned about a firm's operating income or net income since identifying what determines a firm's operating performance is an important part of its firm value analysis. Realized gains and losses are mostly reported through net income. However, other items that are potentially crucial to firm value and performance are included in OCI. The disclosure of OCI is particularly important for financial firms such as insurance companies and banks, and since such firms have large investment portfolios. The gains and losses included in OCI can be categorized into two types: (1) the items that can be reclassified into earnings such as unrealized gains or losses on available-for-sale (AFS) investment securities (i.e., changes in fair values), any adjustments from foreign currency translation and unrealized gains/losses related to valuation of cash flow hedge derivatives, and (2) the items that cannot be reclassified into earnings such as unrealized gains and losses on asset revaluations and re-measurement components of defined benefit plans. The unrealized gains and losses included in OCI allow information users to identify potential gains and losses expected from a firm's investing activities. OCI also provides information on the extent of the changes in foreign exchange and its impact on firm operation particularly for firms with large foreign operations or firms hedging for foreign exchange risks. When retirement benefits account for a large proportion, information about OCI may help a firm assess the effect of retirement benefits on its future performance. Any asset revaluation gains may help predict the cash flows generated by the revalued asset by indicating the increase in the value of the asset.

Several studies examine the valuation usefulness of OCI disclosure to a firm's stakeholders such as investors and managers. Using a sample of U.S. banks, Bratten, Causholli, and Khan (2016) present evidence that fair value adjustments for information in OCI can help forecast future earnings in both one and two years ahead. Using the sample of Korean companies, some studies have examined whether the disclosure of OCI is related to the current period's stock returns or firm value. However, the empirical research investigating the effect of OCI in predicting future operating performance after IFRS adoption is lacking. K-IFRS has influenced and changed many aspects of financial reporting behavior (Noh & Kim, 2015). A follow-up study is needed based on the data after the introduction of K-IFRS, which made a substantial revision on OCI reporting, to investigate whether OCI is useful in predicting future earnings.

Using the quarterly data from the second quarter of fiscal year 2013 to the fourth quarter of fiscal year 2016, we investigate whether OCI is incrementally useful in predicting future earnings over net income. We use the sample of 5,075

firm-quarter observations and find that OCI is positively associated with future pre-tax earnings. When we further divide OCI into its components and examine the effects, we find that the predicating ability of OCI is driven by the unrealized gains and losses on AFS investment securities, while the others exhibit insignificant results. In addition, we investigate whether the reliability of the information embedded in OCI affects their predictive value. To test, we partition our sample by whether firms are audited by the Big 4 and find the positive and significant association is more pronounced for firms Big 4 auditors.

Our study is contributing to the literature on OCI usefulness by providing direct evidence on whether OCI information improves the prediction of firm performance. Our study on the predictive value of OCI complements the existing value relevance research on OCI and also speaks for the (gross) benefits of adopting IFRS in Korea. The information provided by financial statements is intended not only to evaluate the firm value, but also to help assess the performance in the current period and forecast future performance. In this regards, our study directly tells on an important feature of accounting information that is the predictive ability of OCI to predict future outcomes. Moreover, our study provides more general evidence on the predictive ability of OCI than Bratten et al. (2016) because our results can be applied to non-financial companies whereas, Bratten et al. (2016) exclusively focus on firms in financial industry.

Our paper proceeds as follows. First, Section 2 presents the institutional background of OCI reporting and hypotheses development. Section 3 delineates our research model and describes the sample selection procedure. Section 4 discusses the empirical results of our tests. Section 5 concludes.

2. Literature Review

2.1. Institutional Background of OCI Reporting

In 1997, Financial Accounting Standard Board (FASB) announced the Statement of Financial Accounting Standards No. 130 (SFAS 130), "Reporting Comprehensive Income". This standard requires that comprehensive income and its components be reported in the financial statements (Dhaliwal, Subramanyam, & Trezevant, 1999). Under SFAS 130, there are three options for disclosing OCI: (1) in an income statement including both comprehensive income and net income, (2) in a statement of comprehensive income and (3) in the statement of changes in equity. While all three options are acceptable, firms tend to prefer to disclose OCI in the statement of changes in equity. Related, Hirst and Hopkins (1998) utilize the data from the period

before implementing comprehensive income reporting and find evidence that analysts are more likely to detect a firm's earnings manipulation better when OCI is disclosed in an income statement than in the statement of changes in shareholder's equity. Using experimental research, Maines and McDaniel (2000) also provide evidence that presenting the information in an income statement is better for information users in estimating corporate performance. As these studies collectively suggest, placing comprehensive income number in the statement of changes in equity has not been allowed since 2011.

In Korea, Korean-Generally Accepted Accounting Standards (K-GAAP) specifies only the components and totals of net income in an income statement. Likewise, the items that are not driven by equity transactions, but that result in increases or decreases in equity (in general, unrealized gains/losses from the fair value measurement of assets and liabilities) were not reported in the income statement. Rather, these income items were directly reflected in equity; the income statement was not able to account for all changes in equity (i.e., dirty surplus income). Subsequently, as a preparation for IFRS implementation to enhance the convergence of accounting standards across countries, the concept of comprehensive income was first introduced in 2007. Since then, the information about OCI was required to be disclosed in the notes to the income statement, suggesting OCI as a part of comprehensive income instead of the capital adjustment items. Since the adoption of IFRS in 2011, OCI has been reported in the statement of comprehensive income. This enables to recognize all changes in equity as comprehensive income, except those from transactions with owners (i.e., clean surplus income).

2.2. Hypotheses Development

There have been conflicting perspectives on the financial reporting of accounting income, which summarizes the performance of a firm for a specific period: one arguing that income should incorporate all changes in equity, except those from any transactions with shareholders (i.e., 'all-inclusive(comprehensive)' view) and the other perspective arguing that special and non-recurring items of revenues, expenses, gains and losses should not contaminate the measurement of performance (i.e., 'current operating income' view). Since the introduction of Accounting Principles Board Opinion 9 in year 1966, the US has advocated that the reporting of income should be based on more comprehensive income in the perspective of the 'all-inclusive' view. However, in reality, the accounting standard explicitly introduces OCI items to the balance sheet owner's equity and bypassing income in the income statement, basically taking the position of 'current operating income' view (Biddle & Choi, 2006; Dhaliwal, Subramanyam, &

Trezevant, 1999). Then, following the issuance of SFAS 130 introduced in 1997, only four designated OCI items to be included in the comprehensive income statement following the 'all-inclusive' view, but other items are recorded as owner's equity under the previous pronouncement, resulting in a mixed position that also accommodated the 'current operating income' view.

Advocates of the 'current operating performance' view have argued that the performance evaluation of management and the projection of a firm's long-term cash flows are better achieved when income insulated from external and transitory effects is provided to decision-makers. On the other hands, those arguing 'comprehensive income' believe that the information of comprehensive income is less likely to be manipulated; it is more aligned with valuation theory. Motivated by the competing views on accounting income, this study investigates whether the information embedded in OCI provides useful information in predicting a firm's future performance.

It is not clear whether OCI is incrementally useful in predicting future firm performance after controlling for contemporaneous net income. For instance, the unrealized gains/losses on AFS investment securities may be less likely to predict future performance because its amount would fluctuate with market conditions and less likely to persist over time. Any gains or losses on asset revaluation may also be unlikely to be recognized in the future once it has been reported in OCI in the current period. On the one hand, the unrealized gains/losses related to AFS investment securities may be useful in predicting future earnings because it provides relevant information about a firm's investing activities and, if the realization of gains and losses occurs, such information may be utilized in the prediction. Therefore, it is an empirical question whether OCI number provides useful information in predicting future performance. OCI is unrealized gains and losses that are primarily long-term in nature and changes with external market factors. Several studies demonstrate that since the amount of OCI is determined by short-term market movements and includes various temporary factors, which are beyond the control of management, they follow a random walk thus, do not predict or make hard to predict a firm's future performance (Chambers, Linsmeier, Shakespeare, & Sougiannis, 2007; Skinner, 1999). Accordingly, Dhaliwal et al. (1999) raised the question on the validity of SFAS 130 that required to report comprehensive income because the incremental value relevance or predicative value of OCI over net income has not been fully proved.

In contrast, the proponents of comprehensive income reporting believe that comprehensive income incorporates all the facts that affect the value of the firm, helping to assess and predict firm performance. In particular, OCI contains fair value estimates. Related, Ohlson (1999) analytically shows that, while changes in fair value are a random walk

and thus, do not predict future changes in fair value, they could play a role for predicting future performance. For instance, the unrealized gains/losses accumulated over time before the sale of the asset can be related to future firm performance. Aboody, Barth, and Kasznik (1999) find that upward adjustments of fixed assets from revaluation are significantly related to changes in future earnings and future cash from operations. Park, Park, and Ro (1999) and Evans, Hodder, and Hopkins (2014) show that accumulated fair value adjustments of investment securities are positively associated with income in the future which is realized from these instruments. Moreover, any gains (losses) on valuation of a derivative for hedging may be related to a firm's future performance because this item reflects the fact that the price of the underlying assets has moved in a direction favorable (unfavorable) to the firm. Markar, Wang, and Alam (2013) and Campbell (2015) find the supporting evidence showing that gains and losses on valuation of cash flow hedge derivatives are negatively related to the firm's profitability and cash flows in the future. Jones and Smith (2011) uses the sample of non-financial companies in the U.S. and finds that OCI has predicting ability for 1-year ahead earnings however not for longer horizon earnings. Using a sample of banks where the importance of OCI is relatively higher than that of nonbanks, Bratten et al. (2016) empirically suggest that fair value changes in OCI can forecast earnings in 1 and 2 years ahead. Decomposing OCI into its components, the unrealized gains/losses on AFS are significantly associated with future earnings, and the unrealized gains/losses from cash flow hedge derivatives are negatively related to future earnings. Unlike Bratten et al. (2016), we use a sample of non-financial firms in an attempt to provide more general evidence on the usefulness of OCI in predicting future earnings. Based on the arguments above, Figure 1 illustrates our research question on the association between OCI and future earnings. We state our hypotheses as follows:

H1: OCI is positively associated with future earnings.

H2: Each component in OCI is positively associated with future earnings.

Figure 1: Research Model

3. Research Design and Sample

3.1. Research Methodology

To test our hypotheses, we estimate the following models (1) and (2) by employing the regression models in Bratten et al. (2016). Specifically, model (1) tests for the effect of OCI on future ROA, and model (2) for the effect of individual OCI components on future ROA.

$$\begin{aligned} \text{Pre-Tax_ROA}_{t+1 \text{ or } t+2} = & \alpha + \beta_1 \text{Pre-Tax_ROA}_t + \beta_2 \text{Log_Ast}_t \\ & + \beta_3 \text{Pre-Tax_ROA}_t * \text{Log_Ast}_t + \beta_4 \\ & \text{PtOCI}_t + \text{Time Fixed Effects} + \varepsilon_{t+1 \text{ or } t+2} \end{aligned} \quad (1)$$

$$\begin{aligned} \text{Pre-Tax_ROA}_{t+1 \text{ or } t+2} = & \alpha + \beta_1 \text{Pre-Tax_ROA}_t + \beta_2 \text{Log_Ast}_t \\ & + \beta_3 \text{Pre-Tax_ROA}_t * \text{Log_Ast}_t \\ & + \beta_4 \text{PtOCI_AFS}_t + \beta_5 \text{PtOCI_} \\ & \text{Derivatives}_t \\ & + \beta_6 \text{PtOCI_Other}_t + \text{Time Fixed Effects} \\ & + \varepsilon_{t+1 \text{ or } t+2} \end{aligned} \quad (2)$$

In the models, *Pre-Tax_ROA* indicates a firm's accounting performance in the fiscal quarter and is income before taxes scaled by lagged total assets. To estimate future performance, *Pre-Tax_ROA* is measured 1 and 2 quarters ahead and is indicated by $t+1$ and $t+2$, respectively.

PtOCI, our variable of interest, is the estimated pre-tax other comprehensive income scaled by lagged total assets. We further classify *PtOCI* into its components as unrealized gains and losses on available on AFS securities (*PtOCI_AFS*), unrealized gains and losses on valuation of cash flow hedge derivatives (*PtOCI_Derivatives*), and all other adjustment included in *PtOCI* (*PtOCI_Other*), and measure in the same way as *PtOCI*. In addition, we include firm size (*Log_Ast*) in order to control for unobservable or omitted factors that may affect future performance as firm size implies various features of a firm such as business complexity and so on. The regression models include year-quarter fixed effects to control for possible time-specific factors.

As an additional test, we analyze whether the reliability of fair value estimates enhances the predictive value of OCI. We predict that the financial information audited by quality auditors (i.e., Big 4 audit firms) would produce generally more reliable estimates in OCI, leading to higher predictive value for future performance. As in prior studies, we construct a dummy variable named *Big 4*, which equals to 1 for the firms audited by Big 4 auditors, and 0 otherwise (Muhammad, Shah, & Islam, 2014; Muhammad, Rehman, & Waqas, 2016; Mohammadi & Esmailioghaz, 2017; Khudadad, Tahir, & Jan, 2018; Chu & Ki, 2019). We then divide the sample based on *Big 4* and estimate the regression models (1) and (2) for each subsample.

3.2. Sample Selection

Table 2 presents the sample selection process. Our sample covers all non-financial firms from the second quarter of fiscal year 2013 to the fourth quarter of fiscal year 2016. We choose firms listed in the KOSPI market (including delisted firms), which is the largest and the oldest capital market in Korea (Kim & Lee, 2017). Since our sample firms are required to follow K-IFRS, we can obtain the detailed information on OCI components in their comprehensive income statement. The initial sample composed of 16,920 firm-quarter observations (1,128 firms) and includes data for fiscal fifteen quarters in the sample period. We drop

observations with missing values in financial information for the relevant variables used in the analyses. The final sample consists of 5,075 firm-quarter observations. All financial information is extracted from DataGuide and, all continuous variables used in analyses are winsorized at the top/bottom 1% of their distributions to reduce the influence of outliers.

Table 3 presents the sample distribution by time and industry. Panel A shows the distribution of sample by fiscal year and quarter. We find that at least 322 to 351 observations are selected for each quarter, suggesting that observations are distributed fairly evenly over time. Panel B reports the distribution by industry. We use the two-digit industry classification of the Korea Standard Industry Code. The

Table 1: Variable Definitions

Variable	Definition
<i>Pre-Tax_ROA</i>	Income before taxes in quarter <i>t</i> scaled by total assets in quarter <i>t-1</i> ;
<i>Log_Ast</i>	Logarithm of total assets in quarter <i>t</i> ;
<i>PtOCI</i>	Pre-tax other comprehensive income scaled by total assets in quarter <i>t-1</i> where, Pre-tax other comprehensive income is measured by dividing other comprehensive income by 1 minus the statutory tax rate (i.e., 22% during our sample period);
<i>PtOCI_AFS</i>	Pre-tax unrealized gains/losses related to fair value adjustments of AFS securities (the amount is divided by 1 minus the statutory tax rate 22%) scaled by lagged total assets;
<i>PtOCI_Derivatives</i>	Pre-tax unrealized gains/losses related to fair value adjustments of cash flow hedge derivatives (the amount is divided by 1 minus the statutory tax rate 22%) scaled by lagged total assets;
<i>PtOCI_Other</i>	All other adjustment in <i>PtOCI</i> excluding both <i>PtOCI_AFS</i> and <i>PtOCI_Derivatives</i> (the amount is divided by 1 minus the statutory tax rate 22%) scaled by lagged total assets. i.e., $[(PtOCI - PtOCI_AFS - PtOCI_Derivatives) / (1-0.22)] / \text{total assets in } t-1$.
<i>Big 4</i>	Dummy variable equals to 1 for firm audited by the Big 4 (Samil PWC, Samjong KPMG, Deloitte Anjin, Ernst & Young Hanyoung), and 0 otherwise.

Table 2: Sample Selection Process

Sample criteria	N (firm-quarters)
Initial sample of firms listed in KOSPI	16,920
Deleting observations in financial industry	8,355
Deleting observations with missing values in measuring variables required for analyses	5,075

Note: Table 2 describes the sample selection procedures. The initial sample of firms listed in KOSPI consists of 16,920 firm-quarter observations extracted from FnGuide for the fiscal quarters 2013 2Q – 2016 4Q. Non-financial firms are selected as our sample for the consistency of the accounting information. We screen the data for missing observations of relevant variables, resulting in 5,075 firm-quarter observations. We winsorize the variables at the top / bottom 1% to mitigate the influence of outliers.

most frequent industry is chemicals manufacturing (14.3%), followed by automobiles industry (10.5%).

Table 3: Sample Distribution

Panel A: Sample Distribution by Fiscal Quarter

	Q1	Q2	Q3	Q4	Total
2013	0	329	325	322	976
2014	337	338	335	335	1,345
2015	338	339	340	340	1,357
2016	350	348	348	351	1,397
Total	1,025	1,354	1,348	1,348	5,075

Panel B: Sample Distribution by Industry

Two-digit KSIC Industry Classification	N
Manufacture of basic metals	427
Manufacture of furniture	60
Manufacture of leather, luggage and footwear	36
Manufacture of rubber and plastic products	244
Manufacture of fabricated metal products, excluding machinery and furniture	95
Manufacture of other machinery and equipment	358
Manufacture of other transport equipment	138
Other manufacturing	27
Manufacture of tobacco products	15
Manufacture of wood, of products of wood, cork, excluding furniture	45
Manufacture of other non-metallic mineral products	255
Manufacture of textiles, excluding apparel	147
Manufacture of food products	384
Manufacture of beverages	75
Manufacture of medical, precision and optical instruments	62
Manufacture of pharmaceuticals, medicinal chemicals and botanical products	341
Manufacture of apparel, clothing accessories and fur articles	205
Manufacture of motor vehicles, trailers and semitrailers	534
Manufacture of electrical equipment	236
Manufacture of electronic components, computers, visual, sounding and communication equipment	474
Manufacture of coke, briquettes and refined petroleum products	27

Manufacture of pulp, paper and paper products	164
Manufacture of chemicals and chemical products, excluding pharmaceuticals and medicinal chemicals	726
Total	5,075

Note: Table 3 demonstrates the sample distribution. Panel A presents the distribution by time (year and quarter); Panel B shows the distribution by industry using the two-digit industry classification of the Korea standard industry code (KSIC).

4. Empirical Results

4.1. Descriptive Statistics

Table 4 is the descriptive statistics. The number of observations for our sample is 5,075 firm-quarters. The mean(median) value of *Pre-Tax_ROA* is 0.0075 (0.0083), suggesting that income before taxes is approximately 0.75% (0.83%) of total assets in the beginning of quarter. The mean(median) value of other comprehensive income before tax, *PtOCI*, is -0.0002(-0.0001), indicating that, on average, the amount of pre-tax OCI accounts for about 0.02% (0.01%) of total assets in the beginning of quarter. The individual components of OCI (i.e., *PtOCI_AFS*, *PtOCI_Derivatives*, *PtOCI_Other*) also presents the similar distribution.

4.2. OCI and Predictability of Future Earnings

In this section, we report the regression results that investigate the relation between OCI and future performance. Table 5 reports the regression estimation results of model (1), estimating the predicting ability of *PtOCI* for *Pre-Tax_ROA* in future periods, are shown in the first two columns, whereas those of model (2), estimating the predictability of OCI components, are presented in the last two columns. Likewise, the primary coefficient of interest is *PtOCI* in the first two columns for our first hypothesis and, those for the second hypothesis are *PtOCI_AFS*, *PtOCI_Derivatives*, and *PtOCI_Other* in the last two columns. Column (1) and (3) provide the results for the prediction of 1-quarter-ahead *Pre-Tax_ROA* and, column (2) and (4) suggest the estimation results for the prediction of 2-quarter-ahead *Pre-Tax_ROA*.

In column (1), we find that contemporaneous earnings predict future earnings, indicating that the coefficient on *Pre-Tax_ROA* is positive and statistically significant. The coefficient on *Log_Ast* is also significantly positive, suggesting that larger firms generate relatively higher future profitability. More importantly, consistent with our first hypothesis, our results indicate that pre-tax OCI is

Table 4: Descriptive Statistics

Variable	Mean	STD	Q1	Med	Q3
<i>Pre-Tax_ROA</i>	0.0075	0.0235	-0.0007	0.0083	0.0190
<i>Log_Ast</i>	27.1393	1.5302	26.0708	26.9128	27.7923
<i>PtOCI</i>	-0.0002	0.0093	-0.0028	-0.0001	0.0018
<i>PtOCI_AFS</i>	-0.0001	0.0047	-0.0001	0.0000	0.0001
<i>PtOCI_Derivatives</i>	-0.0000	0.0002	0.0000	0.0000	0.0000
<i>PtOCI_Other</i>	-0.0003	0.0066	-0.0021	-0.0000	0.0012
<i>Big4</i>	0.6735	0.4690	0.0000	1.0000	1.0000

Note: Table 4 reports the descriptive statistics. See Table 1 for detailed variable definitions.

Table 5: OCI and Predictability of Pre-tax Earnings

	Total OCI		OCI components	
	<i>Pre-Tax_ROAt+1</i>	<i>Pre-Tax_ROAt+2</i>	<i>Pre-Tax_ROAt+1</i>	<i>Pre-Tax_ROAt+2</i>
Intercept	-0.0333*** (-6.25)	-0.0223*** (-4.03)	-0.0342*** (-6.40)	-0.0232*** (-4.17)
<i>Pre-Tax_ROA</i>	0.4559*** (24.78)	0.4723*** (24.68)	0.4546*** (24.72)	0.4708*** (24.60)
<i>Log_Ast</i>	0.0010*** (5.28)	0.0011*** (5.29)	0.0010*** (5.37)	0.0011*** (5.36)
<i>Pre-Tax_ROA</i> * <i>Log_Ast</i>	-0.0015*** (-3.63)	-0.0026*** (-6.17)	-0.0014*** (-3.63)	-0.0026*** (-6.17)
<i>PtOCI</i>	0.0549* (1.68)	0.0645* (1.90)		
<i>PtOCI_AFS</i>			0.1429** (2.27)	0.1325** (2.02)
<i>PtOCI_Derivatives</i>			1.5878 (1.12)	1.4120 (0.96)
<i>PtOCI_Other</i>			-0.0095 (-0.19)	-0.0038 (-0.08)
Time Fixed Effects	Included	Included	Included	Included
Observations	5,075	5,075	5,075	5,075
Adjusted R2	0.205	0.186	0.205	0.186

Note: Table 5 reports the regression estimation results for Model (1) and (2) analyzing the predictability of OCI (and its components) for 1- and 2-quarter-ahead-earnings. See Table 1 for variable definitions. All specifications include year-quarter fixed effects. *, **, *** indicate significance at 10%, 5%, and 1%, respectively.

incrementally related to 1-quarter ahead pre-tax earnings ($Pre-Tax_ROA_{t+1}$) after controlling for contemporaneous pre-tax earnings ($Pre-Tax_ROA_t$). The coefficient on $PtOCI_t$ is positive and statistically significant at 10%. When we extend to examine the longer horizon using 2-quarter ahead pre-tax earnings ($Pre-Tax_ROA_{t+2}$) the positive and significant

coefficient on $PtOCI_t$ remains in column (2). These results suggest that OCI does contain incremental information that can be used in predicting future performance.

Next, in the last two columns, we categorize OCI into its components and investigate which component primarily drives the positive association between OCI and future

performance. The results present that unrealized gains and losses of AFS securities are positively associated with both 1- and 2-quarter ahead pre-tax earnings (i.e., $Pre\text{-}Tax_ROA_{t+1}$ and $Pre\text{-}Tax_ROA_{t+2}$), suggesting that in column (3) and (4), the coefficients on $PtOCI_AFS$ present positive values with significant at 5% level. In contrast, the coefficients on unrealized gains and losses for derivatives for hedging, $PtOCI_Derivatives$, are not statistically significant. The unrealized gains and losses related to the other components ($PtOCI_Other$) are also not significantly associated with future pre-tax earnings.

Overall, our evidence suggests OCI predicts future earnings both 1 and 2 quarters ahead after controlling for contemporaneous earnings, consistent with the first hypothesis. In addition, regarding the second hypothesis on the prediction ability of OCI components, we find that the components of OCI have different impacts in predicting future profitability, suggesting that not all gains and losses included in OCI have predictive power.

4.3. Additional Test: The Reliability of OCI Information

In this section, we investigate whether the reliability in OCI related estimates enhances its ability in predicting future earnings. As discussed in the research design section, we measure the extent of reliability using the quality of external auditors. In particular, Big 4 auditors are known to provide higher quality audit services than non-Big4 auditors because they have incentives to maintain their reputation and also have the ability and resources for better quality audits (e.g., DeAngelo, 1981). Prior empirical studies have demonstrated that firms audited by quality external auditors (i.e., Big 4) tend to have a lower probability of accounting fraud, lower amount of discretionary accruals and a higher likelihood of going concern opinions (Becker, DeFond, Jambalvo, & Subramanyam, 1998; Chan & Wu, 2011; DeFond, Erkens, & Zhang, 2017; Kim, Chung, & Firth, 2003; Lennox & Pittman, 2010). Investors also respond more positively to firms with

Table 6: Additional Test: The Reliability of OCI Information

Dependent variable : Pre-Tax_ROA t+1				
	Big4 (Big 4 = 1)	Non-Big4 (Big 4 = 0)	Big4 (Big 4 = 1)	Non-Big4 (Big 4 = 0)
Intercept	-0.0094 (-1.57)	-0.0413*** (-2.70)	-0.0097 (-1.61)	-0.0420*** (-2.74)
Pre-Tax_ROA	0.6981*** (23.75)	0.3660*** (13.22)	0.6977*** (23.75)	0.3632*** (13.13)
Log_Ast	0.0007*** (3.29)	0.0017*** (2.86)	0.0007*** (3.36)	0.0017*** (2.92)
Pre-Tax_ROA *Log_Ast	-0.0087*** (-11.47)	0.0010** (2.05)	-0.0088*** (-11.51)	0.0010** (2.06)
PtOCI	0.0536 (1.43)	0.0541 (0.87)		
PtOCI_AFS			0.1788** (2.54)	0.0850 (0.66)
PtOCI_Derivatives			1.7265 (1.25)	2.6515 (0.34)
PtOCI_Other			-0.0014 (-0.02)	-0.0587 (-0.64)
Time Fixed Effects	Included	Included	Included	Included
Observations	3,418	1,657	3,418	1,657
Adjusted R2	0.227	0.202	0.228	0.201

Note: Table 6 reports the regression estimation results for model (1) and (2) analyzing the predictability of OCI (and its components) for 1-quarter-ahead-earnings for firms audited by Big 4 vs. non-Big 4. See Table 1 for variable definitions. The model specifications include year-quarter fixed effects. *, **, *** indicate significance at 10%, 5%, and 1%, respectively.

financial information audited by quality auditors (Chae & Hwang, 2017). In other words, the firms audited by the Big 4 tend to generate more reliable financial information and have higher earnings quality. Since the most of unrealized gains and losses in OCI arise from revaluation of assets, auditors' expertise would play an important role when fair value adjustments and revaluations are made in the subsequent measurement of the assets.

In Table 6, we distinguish the sample into firms with Big 4 external auditor and non-Big4 auditor and estimate regression model (1) and (2) separately for each subsample. About 67.35% (3,418 firm-quarters) falls into the group of firms where their financial statements are audited by Big 4 auditors, whereas the remaining 32.65% (1,657 firm-quarters) is the firms audited by non-Big 4 auditors. Table 6 reports the estimation results using 1-quarter ahead earnings ($Pre\text{-}Tax_ROA_{t+1}$). For firms with Big 4 auditors, the results suggest that the coefficient on $PtOCI$ is not significant but still has higher t -value compared to the coefficient for firms with non-Big 4 auditors. Additionally, when we decompose OCI into its components and test its influence on future predictability, we find that $PtOCI_AFS$ is positively associated with future earnings with the statistical significance at 1% for firms with Big 4 auditors. Related to the magnitude and the statistical significance, the coefficient on $PtOCI_AFS$ is larger and it has higher t -value when they are compared to the values to the results observed from the full sample in Table 4. In contrast, the coefficient on $PtOCI_AFS$ is not significant for firms with non-Big 4 auditors. In summary, our results suggest that for firms with the quality external audits, the ability of OCI, especially the net unrealized gains and losses on available on AFS securities, for predicting future earnings enhances as the reliable measurement becomes more likely.

5. Conclusion

5.1. Summary

This study investigates whether OCI contains information that helps in the prediction of future performance. There are two distinctive views on OCI reporting: one that argues that since OCI will be realized in the near future and, it incorporates information about the firm's ability in operating investment assets, it does help predict future firm performance, and the other believes that the unrealized OCI is a transitory number that is influenced by external market factors therefore, does not help predict future performance. Given these opposing arguments, our study examines whether OCI has predictive value for future earnings. Our results show that OCI is incrementally associated with future ROA after controlling for contemporaneous ROA, suggesting the predictive value of OCI. Furthermore, we find that among OCI individual components, the net unrealized gains/losses

related to AFS securities are positively associated with future ROA, while the net unrealized gains/losses on derivatives and the other items present insignificant results. These findings imply that for AFS securities, firms may be able to convert gains and losses into cash and use the information to predict future earnings while, the changes in derivatives for hedging or other items in OCI are not directly related to the next period's earnings. As an additional test, we show that the predictive value of the unrealized gains/losses on AFS securities enhances in conditions that result in more reliable estimates in particular, when the financial statement is audited and monitored by Big-4 auditors. Overall, our results empirically demonstrate that the valuation of AFS securities is positively related to the next period's earnings. Our findings are consistent with Evans et al. (2014) and Park et al. (1999) which provide evidence that the valuation amount of AFS securities is related to the realized gains and losses of those assets in the future.

5.2. Discussion

After the mandatory adoption of IFRS in the Korean capital market in 2011, the statement of other comprehensive income became one of the main financial statements. Accordingly, OCI information, which was previously reported in a note, is disclosed in the body of the statement of comprehensive income and thus became more accessible to its users. Our study contributes to both literature and practice by suggesting that the disclosure of OCI in the statement of comprehensive income after the implementation of K-IFRS does contain information content that is useful in the prediction of future profitability.

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