

# *The Value Relevance of OCI Recycling in Japan: Evidence from Stock Market Reactions*

Nobuyuki Kumoi<sup>1,\*</sup>, Jiarui Xu<sup>2</sup>, Yifei Liu<sup>3</sup>

<sup>1</sup>Faculty of Economics, Niigata Sangyo University, Kashiwazaki, Niigata, 9451393, Japan

<sup>2</sup>Faculty of Current Business, Kyushu International University, Kitakyushu, Fukuoka, 8058512, Japan

<sup>3</sup>Monash Business School, Monash University, Melbourne, Victoria, 3145, Australia

\*Corresponding author: kumoi1205@gmail.com

**Keywords:** OCI, Recycling, NI, AFS, Value-relevance

**Abstract:** This study investigates the market pricing of OCI recycling using data from Japanese listed companies between 2013 and 2022. We analyzed 3,610 instances of non-zero OCI recycling using price and return models. The market prices OCI recycling, notably the AFS component, while OCI components with lower persistence have less impact. These findings challenge the ASBJ's stance that recycling all OCI components into net income offers more informational value than non-recycling. Since net income is a key performance metric, we suggest restricting OCI recycling to maintain its reliability. The study also raises concerns about the OCI framework under IFRS, emphasizing the need for clearer guidelines and further debate.

## 1. Introduction

The Japanese accounting system prioritizes historical cost, with net income serving as the cornerstone of financial statements. This emphasis makes net income the most value-relevant metric under Japanese Generally Accepted Accounting Principles (JGAAP), reflecting investment outcomes based on the realization concept.

In 2010, the Accounting Standards Board of Japan (ASBJ) issued ASBJ Statement No. 25, "Accounting Standard for Presentation of Comprehensive Income", as part of the convergence efforts between JGAAP and International Financial Reporting Standards (IFRS). This standard requires Japanese listed companies to disclose comprehensive income alongside net income (NI) to achieve the goals of the convergence project. Given net income's central role in JGAAP, recycling other comprehensive income (OCI) is essential for accurately reflecting investment outcomes and maintaining the 'clean-surplus relationship' between net income and equity <sup>[1]</sup>. Therefore, all OCI components must be recycled upon the realization of the investment, without exception.

Understanding OCI recycling is critical, as it involves reclassifying items recorded as OCI into net income once specific realization and uncertainty criteria are met (Cauwenberge & Beelde, 2007) <sup>[2]</sup>. These items often result from external economic events such as price fluctuations, stock market shifts, exchange rates, and interest rates, which inherently link OCI to significant uncertainty, estimation, and variability. Recycling OCI components into net income does not alter total comprehensive

income but can affect net income by converting unrealized gains or losses into realized ones.

Reporting these realized gains or losses offers valuable insights into management performance and capital regulation (Park, 2018) <sup>[3]</sup>. OCI recycling also reflects management's influence on operational performance and provides insight into future outcomes. If investors accurately interpret the information underlying OCI recycling, the market is likely to factor this into pricing.

Rees & Shane (2012) noted that recycling reflects stakeholder perspectives submitted to the Financial Accounting Standards Board (FASB), highlighting previously unacknowledged differences between OCI and net income reporting <sup>[4]</sup>. Despite increasing research on OCI's usefulness over the past decade, the market's perception of OCI recycling remains underexplored, particularly in Japan, where net income is prioritized.

This study aims to empirically determine whether the Japanese market acknowledges and integrates the incremental information from OCI recycling into stock prices. We analyzed OCI recycling data from listed companies spanning 2013 to 2022 and conducted statistical tests using stock price and return models. This study is crucial for evaluating the necessity of OCI recycling and assessing the validity of standards set by regulatory bodies. Currently, OCI is considered a component of comprehensive income distinct from net income, leading analysts and users to frequently use net income as a proxy for earnings in Earnings-Per-Share (EPS) calculations. If OCI recycling is found to lack value-relevant information, it may be deemed redundant, potentially leading to OCI being reported with net income and EPS calculations based solely on comprehensive income.

## 2. Literature Review and Hypothesis Development

Accounting operates as a system designed to report useful information, guided by three primary processes: the standard-setting by authoritative bodies ( $\alpha$ ), the preparation and issuance of financial reports by companies ( $\beta$ ), and the indirect feedback loop from users to standard setters ( $\gamma$ ). Evaluating OCI recycling necessitates considering the perspectives of these three groups: standard setters, preparers, and users. (Figure 1).

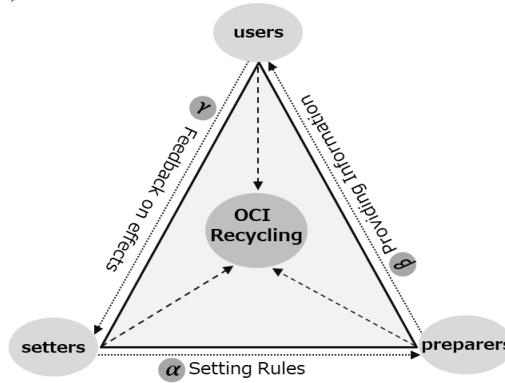


Figure 1: Accounting Function Process

### 2.1 Standard Setters

OCI recycling is allowed under U.S. GAAP (ASC 220-10-45-15) <sup>[5]</sup>, IFRS (IAS No. 1) <sup>[6]</sup> <sup>[7]</sup>, and JGAAP (ASBJ Statement No. 25). While IFRS imposes strict limitations on which OCI items may be recycled, both U.S. GAAP and JGAAP permit the recycling of all OCI items into net income.

In 2015, the ASBJ introduced Japan's Modified International Standards (JMIS), adapting IFRS to the Japanese context. A critical aspect of JMIS No. 2 (Accounting for Other Comprehensive Income) mandates that all OCI components be recycled into net income (ASBJ, 2015a) <sup>[8]</sup>, asserting that this method offers users greater informational value than non-recycling statements (ASBJ, 2015b) <sup>[9]</sup>.

Based on this, the following hypothesis is proposed:

**H1:** The recycling of OCI components into net income provides incremental value relevance.

## 2.2 Preparers of Financial Information

Research indicates that OCI recycling can be manipulated for earnings management. Arthur et al. (2017) found a positive correlation between OCI recycling gains and the achievement of earnings benchmarks<sup>[10]</sup>. Additional evidence suggests that managers may opportunistically reclassify income between the income statement and OCI to meet earnings targets (Chiorean et al., 2017)<sup>[11]</sup>. Similarly, Chinese firms have been observed using OCI items for earnings management (Zhao et al., 2018; Wang et al., 2021)<sup>[12]</sup>.

Inoue (2020) identified a positive relationship between income-increasing OCI recycling and the achievement of zero earnings, prior year's earnings, and management forecasts among firms under JGAAP. This suggests that JGAAP's provisions on OCI recycling may create opportunities for earnings management. Consequently, this study will not emphasize the preparers' perspective on recycling<sup>[13]</sup>.

## 2.3 Users of Financial Information

Research on the value relevance of comprehensive income, OCI, and net income has yielded mixed results. Several studies have found that net income is more value-relevant than comprehensive income (Mechelli & Cimini, 2013; Djaballah & Fortin, 2021)<sup>[14]</sup><sup>[15]</sup>. Although comprehensive income and aggregate OCI may lack overall value relevance, certain components of OCI—such as derivatives, hedging activities, and gains and losses from available-for-sale securities—have been shown to be value-relevant (Jahmani et al., 2017)<sup>[16]</sup>. Additionally, OCI, particularly unrealized gains/losses on available-for-sale securities, has been found to have predictive value for future earnings (Lee et al., 2020)<sup>[17]</sup>.

Dechow & Schrand (2004) define income persistence as the ability of income to predict future earnings. Greater persistence enhances the usefulness of net income by providing more accurate predictions of future value<sup>[18]</sup>. Based on this, the following hypothesis is proposed:

**H2:** The incremental value relevance of OCI components varies significantly based on their persistence.

## 3. Research Design and Sample Selection

### 3.1 The Price Model for OCI Recycling

Financial models designed to assess stock returns and prices possess inherent limitations. Kothari & Zimmerman (1995) pointed out that return models frequently suffer from measurement errors in explanatory variables, whereas price models often encounter problems related to omitted variables<sup>[19]</sup>. To address these challenges, they recommended utilizing both models concurrently. Following this recommendation, our study integrates both return and price models to investigate the impact of OCI recycling on stock prices. Building on the precedent set by Kanagaratnam et al. (2009)<sup>[20]</sup> and Dong et al. (2014)<sup>[21]</sup> in utilizing the price model to evaluate the pricing implications of OCI and its components, we adopt a similar approach, as outlined in Equation (1).

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 CI_{i,t} + \varepsilon_{i,t} \quad (1)$$

In this equation,  $P$  represents the adjusted stock price of the company at the end of August in year  $t+1$ .  $BV$  signifies the book value of equity at the year's end, while  $CI$  denotes comprehensive income

for the year. All explanatory variables in the price model are adjusted for the number of shares outstanding at the period's end.

Comprehensive Income ( $CI$ ) is defined as the sum of Net Income ( $NI$ ) and the net amount of Other Comprehensive Income ( $OCI\_N$ ), with " $_N$ " denoting the net amount. This relationship is represented in Equation (2).

$$CI = NI + OCI\_N \quad (2)$$

To isolate the incremental pricing impact of OCI recycling, we decompose net income into two components: net income excluding OCI recycling ( $NIDOCI\_R$ ) and the portion attributed to OCI recycling ( $OCI\_R$ ), with " $_R$ " denoting recycling. This is represented in Equation (3).

$$NI = NIDOCI\_R + OCI\_R \quad (3)$$

If  $OCI\_G$  represents the total unrealized gains and losses recorded in OCI during the period, then  $OCI\_N$  equals  $OCI\_G$  minus the recycled portion,  $OCI\_R$ . This relationship is expressed in Equation (4).

$$OCI\_N = OCI\_G - OCI\_R \quad (4)$$

By substituting Equation (3) into Equation (2), and subsequently incorporating the result into Equation (1), we derive the pricing model (5) developed in this study.

$$P_{i,t} = \alpha_0 + \alpha_1 BV_{i,t} + \alpha_2 NIDOCI\_R_{i,t} + \alpha_3 OCI\_R_{i,t} + \alpha_4 OCI\_N_{i,t} + \varepsilon_{i,t} \quad (5)$$

By combining Equations (2), (3), and (4), it becomes evident that while  $OCI\_R$  does not affect  $CI$ , it increases  $NI$  and decreases  $OCI\_N$ . In Equation (5), OCI recycling is incorporated as an explanatory variable in two forms: directly as  $OCI\_R$ , and indirectly through  $OCI\_N$ . The direct effect of  $OCI\_R$ , as a component added to net income, positively influences the dependent variable. Conversely,  $OCI\_N$ , which reflects the reduction resulting from recycling, exerts a negative impact. Including both recycling variables in the model serves two key purposes: it facilitates a separate analysis of OCI recycling and preserves the fundamental structure and integrity of  $CI$ . When assessing the pricing of OCI recycling, the combined coefficient of the two variables ( $\alpha_3 - \alpha_4$ ) is crucial. If the market values OCI recycling, ( $\alpha_3 - \alpha_4$ ) is expected to be greater than 0.

After analyzing the market pricing of overall OCI recycling, we proceed to examine the pricing of individual OCI recycling components. According to subsequent descriptive statistics, aside from the high frequency and significant amounts associated with gains and losses on available-for-sale securities (AFS), other OCI recycling components occur less frequently and involve smaller amounts. Consequently, in our regression analysis, these items are aggregated, leading to the regression model presented in Model (6).

$$P_{i,t} = \alpha'_0 + \alpha'_1 BV_{i,t} + \alpha'_2 NIDOCI\_R_{i,t} + \alpha'_{31} AFS\_R_{i,t} + \alpha'_{41} AFS\_N_{i,t} + \alpha'_{32} R\_OCI\_R_{i,t} + \alpha'_{42} OCI^{other}\_N_{i,t} + \varepsilon_{i,t} \quad (6)$$

In this model, AFS represents the gains or losses arising from the valuation differences of available-for-sale securities.  $OCI^{other}$  refers to OCI excluding AFS, encompassing the impacts of changes in foreign currency translation adjustments (FCT), deferred gains or losses on hedges (DHE), adjustments for retirement benefits (ARB), and the remaining components of OCI ( $R\_OCI$ ). If the market assigns value to the recycling of OCI components, we expect the overall coefficient for AFS ( $\alpha'_{31} - \alpha'_{41} > 0$ ), and the overall coefficient for OCI excluding AFS ( $\alpha'_{32} - \alpha'_{42} > 0$ ).

### 3.2 The Return Models for OCI Recycling

Chen & Zhang (2006) and Zhang (2014) demonstrated that models incorporating changes in

earnings, profitability, capital investment, and growth opportunities better explain stock returns <sup>[22]</sup> <sup>[23]</sup>. Following their approach, we employ Comprehensive Income (*CI*) to represent earnings, Return on Equity (*ROE*) to reflect changes in profitability, and Book Value (*BV*) to signify changes in net assets, indicative of capital investment, to model stock returns. Our return model is further inspired by the work of Dong et al. (2014) and Badertscher et al. (2014) <sup>[24]</sup>, wherein we conduct a regression analysis of market-adjusted returns on changes in the relatively persistent component of *CI*, *NIDOCI\_R*, alongside the levels of the relatively transitory components. The specifics are outlined in Model (7).

$$R_{i,t} = \beta_0 + \beta_1 \Delta NIDOCI\_R_{i,t} + \beta_2 OCI\_R_{i,t} + \beta_3 OCI\_N_{i,t} + \beta_4 \Delta ROE_{i,t} + \beta_5 \Delta BV_{i,t} + \varepsilon_{i,t} \quad (7)$$

*R* denotes the market-adjusted buy-and-hold monthly return, covering the period from April of the current year to March of the following year.  $\Delta NIDOCI\_R$  signifies the change in *NIDOCI\_R*, calculated as the difference between the current and previous year's *NIDOCI\_R*, normalized by the total market value at the beginning of the year.  $\Delta ROE$  captures changes in profitability, defined as the difference in return on equity between the current and previous years, where return on equity is *NIDOCI\_R*, divided by the net assets at the end of the previous year, adjusted by the ratio of net assets to total market value at year-end.  $\Delta BV$  indicates the variation in capital investments, calculated as the growth rate of net assets at the end of the current year, multiplied by the complement of the net assets to total market value ratio at the end of the prior year.

If the recycling of OCI shows incremental explanatory power for returns, we anticipate a positive combined coefficient ( $\beta_2 - \beta_3 > 0$ ). To further explore the incremental explanatory power of individual OCI components' reclassification on stock returns, we developed return model (8). If the recycling of OCI components offers additional explanatory power, we expect a positive combined coefficient for AFS ( $\beta'_{21} - \beta'_{31} > 0$ ) and for OCI excluding AFS ( $\beta'_{22} - \beta'_{32} > 0$ ).

$$R_{i,t} = \beta'_0 + \beta'_1 \Delta NIDOCI\_R_{i,t} + \beta'_{21} AFS\_R_{i,t} + \beta'_{31} AFS\_N_{i,t} + \beta'_{22} OCI^{other}\_R_{i,t} + \beta'_{32} OCI^{other}\_N_{i,t} + \beta_4 \Delta ROE_{i,t} + \beta_5 \Delta BV_{i,t} + \varepsilon_{i,t} \quad (8)$$

### 3.3 Sample Selection

The initial sample covers a decade from 2013 to 2022, consisting of 9,045 firm-year observations from 2,543 companies that adopted JGAAP in Japan. This selection is based on the adoption of the OCI accounting standard under JGAAP in 2011, with a subsequent two-year adaptation period. Firm and stock data were sourced from the Nikkei Economic Electronic Database Systems (NEEDS) and Financial QUEST. Financial institutions, including banks, securities firms, and insurance providers, were excluded due to their distinct reporting frameworks. Additionally, 2,865 firm-year observations were excluded due to missing data on stock prices, share counts, revenue, financial periods shorter than 12 months, or cases where OCI was zero at the start of the year. The final sample comprises 6,180 firm-year observations.

## 4. Descriptive Statistics

As shown in Table 1, Panel A, publicly listed companies with non-zero OCI\_N report an average annual EPS of ¥2.7871. NI constitutes the majority (96.91%) of Comprehensive Income (CI), while OCI contributes only 3.10%. On average, gains and losses recycled from OCI to NI total approximately ¥1.5665 per share, accounting for 7.83% of NI. Notably, only 24.27% of companies with non-zero OCI experienced recycling into profit or loss.

Significant differences across components are evident in mean values, absolute mean values, proportions relative to NI, and occurrence frequencies. AFS (available-for-sale securities) are

particularly notable, with 46.23% of companies reporting changes in fair value, averaging ¥0.8077 per share. Furthermore, 15.12% of companies recycled previous fair value changes into profit or loss, with an average recycling amount of ¥2.4724 per share.

Table 1: Descriptive statistics of the sample with non-zero OCI\_N (n=6,180)

Panel A	Overall results					
	Mean	Median	Mean of the proportion of NI	Mean of the absolute value	Proportion of non-zero values	T-statistic for mean = 0
CI	95.7457	70.1338	117.60%	110.5391	100.00%	47.34
NI	92.7871	68.7965	100.00%	105.0421	100.00%	55.96
OCI_G	2.9681	-0.0042	25.43%	13.6996	94.11%	4.96
OCI_R	1.5665	0.0008	7.83%	2.8606	24.27%	9.17
OCI_N	1.4016	-0.0319	17.60%	14.2984	100.00%	2.18
Panel B	OCI components results					
	Mean	Median	Mean of the proportion of NI	Mean of the absolute value	Proportion of non-zero values	T-statistic for mean = 0
AFS_G	3.2801	0.0011	24.45%	8.4378	44.83%	4.22
AFS_R	2.4724	0.0007	6.34%	2.5567	15.12%	8.57
AFS_N	0.8077	0.0004	18.11%	10.9945	46.23%	1.49
FCT_G	0.3480	0.0000	1.93%	0.8487	24.88%	3.12
FCT_R	0.1124	0.0000	0.31%	0.1251	4.12%	4.66
FCT_N	0.2356	0.0000	1.62%	0.9738	26.55%	2.19
DHE_G	-0.0084	0.0000	0.04%	0.2779	4.66%	0.18
DHE_R	-0.0082	0.0000	-0.27%	0.1654	2.79%	0.29
DHE_N	-0.0002	0.0000	0.14%	0.4501	5.77%	0.04
ARB_G	-0.5770	0.0000	-0.91%	0.9123	44.24%	8.37
ARB_R	-0.0064	0.0000	0.04%	0.0190	1.56%	0.89
ARB_N	-0.5706	0.0000	-0.87%	0.9208	52.44%	8.66
R_OCI_G	0.8317	0.0000	2.37%	1.2136	14.42%	4.45
R_OCI_R	0.0212	0.0000	0.52%	0.0975	1.19%	0.61
R_OCI_N	0.8105	0.0000	0.85%	1.3111	15.32%	4.31
OCI <sup>other</sup> _G	0.5940	0.0000	2.24%	3.3352	78.69%	2.47
OCI <sup>other</sup> _R	0.1188	0.0000	0.61%	0.3231	8.34%	1.69
OCI <sup>other</sup> _N	0.4752	0.0000	1.63%	3.5973	80.47%	1.78

Note: All variables in the table are adjusted by the number of shares at the end of the year.

Other components exhibited lower figures. For example, the frequencies of unrealized gains and losses for FCT (foreign currency translation adjustments) and ARB (adjustments for retirement benefits) were 26.55% and 52.44%, respectively, but recycling frequencies remained below 5%, with minimal reclassified amounts. For simplification, all components other than AFS were grouped into OCI<sup>other</sup>. Panel B reports a mean value of ¥0.1188 per share. A t-test shows that this mean is significantly different from zero at the 5% level, with 8.34% of companies recording non-zero values.

Table 1 shows that OCI\_N occurs infrequently in samples with non-zero. Focusing on the market pricing of OCI\_R, using the non-zero OCI\_N sample for regression analysis may introduce inference errors. To address this issue, we excluded 2,209 observations where OCI\_R was equal to zero. Additionally, to mitigate the impact of newly listed stocks, we excluded 249 observations from companies listed within the year. Furthermore, 112 observations with missing ΔROE data were excluded from the return model testing. These adjustments resulted in a final sample of 3,610 observations, with their descriptive statistics presented in Table 2.



The mean earnings per share (EPS) for the 3,610 observations is ¥96.4390 (87.2341 + 9.2049), which is higher than the profit level reported in Table 1. OCI recycling significantly enhances this profit. AFS recycling primarily drives this increase, raising EPS by ¥8.8106 (10.10% of *NIDOCI\_R*), indicating economic significance. *OCI<sup>other</sup>\_R* remains minimal, with a mean of ¥0.6281 per share (0.72% of *NIDOCI\_R*) and a median of 0, indicating no economic significance. *NIDOCI\_R* shows greater stability than *OCI\_R* in terms of earnings variability. The coefficient of variation (CV) for AFS\_R is 3.5887 (31.6194/8.8106), significantly smaller than that of *OCI<sup>other</sup>\_R*, which is 14.266885 (9.2259/0.6281). In contrast, the CV for *OCI\_N* is as high as 70.9827 (87.7205/1.2358), reflecting its susceptibility to factors such as securities market fluctuations and exchange rates.

Table 2: Descriptive statistics of variables used in regression analysis (n=3,610)

Panel A	Variables of price models						
	Mean	Min.	1st	Median	99th	Max.	Standard deviation
P	2387.0693	326.0092	504.9947	1970.9707	8508.2013	16511.4127	1690.0204
BV	879.6090	-113.9115	118.4700	734.1813	2844.6754	4917.8380	572.5376
NIDOCI_R	87.2341	-271.8340	-152.0098	61.3617	585.8607	1141.5436	127.9692
OCI_R	9.2049	-421.8913	-58.7669	1.8751	139.8004	209.5621	31.7260
OCI_N	1.2358	-609.1472	-206.9839	-1.0441	231.0419	1696.9937	87.7205
AFS_R	8.8106	-421.4894	-20.6899	0.6170	131.5756	311.4332	31.6194
AFS_N	-0.6271	-609.1472	-209.0081	0.0001	234.3875	1694.9938	86.6338
OCI <sup>other</sup> _R	0.6281	-126.3567	-0.0516	0.0000	27.5297	109.8204	9.2259
OCI <sup>other</sup> _N	-0.6273	-199.0572	-52.3959	0.0001	50.6486	212.9075	16.0867
Panel B	Other variables of return models						
	Mean	Min.	1st	Median	99th	Max.	Standard deviation
R	14.1697	-115.8718	-87.1489	1.5981	270.0123	505.8548	68.6934
ΔNIDOCI_R	3.1535	-75.0674	-75.0674	1.1393	76.7120	229.2931	17.9191
ΔROE	-1.7685	-670.0235	-883.1014	-0.1065	49.7342	156.1222	37.3084

## 5. Regression Result

The company-year two-dimensional clustering regression (cluster2 regression) is recognized as an effective method for addressing individual and temporal effects in panel data (Gow et al., 2010). Table 3 presents the statistical results from applying this method to price models (5) and (6), and return models (7) and (8). Results from price model (5) indicate that, as expected, the overall coefficient for OCI recycling (*OCI\_R* minus *OCI\_N*) is 4.845 (6.556 - 1.711). The F-test shows significance at the 1% level, indicating significant market pricing of OCI recycling. This supports Hypothesis 1, which posits that recycling OCI components into net income enhances value relevance. The coefficient for *NIDOCI\_R* is significantly positive, indicating market recognition of its value. However, its coefficient (4.227) is lower than both the *OCI\_R* coefficient (6.556) and the overall OCI recycling coefficient (4.845). Although these differences are not statistically significant (not reported in the table), they remain noteworthy.

Table 3: Regression results for pricing of OCI recycling (n = 3,610)

	Price models		Return models	
	Model 5	Model 6	Model 7	Model 8
BV	0.774 (4.77)***	0.792 (4.81)***		
NIDOCI_R	4.227 (3.76)***	4.201 (3.87)***		
$\Delta$ NIDOCI_R			0.799 (3.64)***	0.813 (3.62)***
OCI_R	6.556 (2.67)***		1.633 (6.27)***	
OCI_N	1.711 (1.73)		0.267 (0.79)	
AFS_R		6.123 (2.56)***		1.205 (2.98)***
AFS_N		1.372 (1.57)*		0.170 (0.79)
OCI <sup>other</sup> _R		7.625 (1.19)		12.673 (5.18)***
OCI <sup>other</sup> _N		8.939 (1.56)		4.447 (6.69)***
$\Delta$ ROE			0.082 (0.69)	0.069 (0.59)
$\Delta$ BV			0.038 (0.81)	0.031 (0.72)
Adj.R <sup>2</sup>	0.377	0.376	0.069	0.078
OCI_R-OCI_N	4.845 (8.31)***		1.366 (8.33)***	
AFS_R-AFS_N		4.751 (8.85)***		1.035 (3.10)*
OCI <sup>other</sup> _R-OCI <sup>other</sup> _N		-1.314 (0.10)		8.226 (14.10)***

Note: t or F are reported in parentheses. \*, \*\*, \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively (two-tailed).

The BV coefficient closely aligns with the theoretical multiplier of 1 for the book value of equity in the Feltham and Ohlson model (F-test value for equality with 1 is 1.49, p-value is 0.22, unreported in the table). Model (6) examines the market pricing of individual OCI recycling components. The overall coefficient for AFS recycling (*AFS\_R* minus *AFS\_N*) is 4.751 (6.123 - 1.372), with the F-test showing significance at the 1% level, indicating that the market significantly prices AFS recycling. Conversely, the overall coefficient for OCI other recycling (OCI<sup>other</sup>\_R minus OCI<sup>other</sup>\_N) is -1.314 (7.625 - 8.939), contrary to expectations, and the F-test shows no statistical significance, indicating that the market does not significantly price this component. The statistical results of return models (7) and (8) are similar to those of the price models and align more closely with expectations. These findings support Hypothesis 2, which posits that the incremental value relevance of OCI components varies significantly with their persistence. This further suggests that OCI recycling components with lower persistence are less likely to be recognized and valued by the market.

In summary, evidence from both price and return models consistently indicates that the market



assigns incremental value to OCI recycling, especially for economically significant AFS recycling. In contrast, there is only weak evidence for the market pricing of other OCI components that lack economic significance. This suggests that AFS recycling primarily drives the market's pricing of OCI recycling.

## 6. Conclusions

This study assesses how the market recognizes OCI recycling by analyzing data from Japanese listed companies spanning 2013 and 2022. We performed statistical analyses on 3,610 samples exhibiting non-zero OCI recycling, using price and return models to assess whether the market prices OCI recycling and to investigate the underlying factors influencing this valuation.

Our findings indicate that the market recognizes OCI recycling, especially pricing the economically significant AFS component. In contrast, other OCI components seem less influential, suggesting that components with lower persistence struggle to show value relevance. These findings challenge the ASBJ's stance that recycling all OCI components into net income offers more informational value than non-recycling. Since net income is a key performance metric, we suggest restricting OCI recycling to maintain its reliability. Given that net income remains the principal performance metric in Japanese accounting, standard setters should consider imposing restrictions on OCI recycling. Without such restrictions, recycling OCI components with low persistence and predictive power could undermine the reliability and usefulness of net income.

Under IASB guidance, the metric for evaluating corporate performance has gradually shifted from net income to comprehensive income. During this transition, OCI has served as a compromise between these two approaches. Although the IASB acknowledges the need for a conceptual framework to clarify OCI and its recycling, recent consultation papers show no intention to make fundamental revisions to performance reporting. Consequently, Detzen (2016) raises a valid concern that, amidst IFRS convergence, OCI and its recycling may continue to be rationalized without a clear conceptual foundation or sufficient discourse<sup>[25]</sup>. The findings of this study further substantiate this concern.

## References

- [1] Accounting Standards Board of Japan. (2010). *ASBJ Statement No.25 Accounting Standard for Presentation of Comprehensive Income and an Amendment to a Related Standard*. Tokyo, Japan: ASBJ.
- [2] Cauwenberge, P.V., & Beelde, I.D. (2007). *A Critical Note on Empirical Comprehensive Income Research*. Working Paper, Ghent University.
- [3] Park, H. (2018). *Market Reaction to Other Comprehensive Income*. Sustainability.
- [4] Rees, L. L., & Shane, P. B. (2012). *Academic research and standard-setting: The case of other comprehensive income*. *Accounting Horizons*, 26(4), 789-815.
- [5] FASB (2011). *Accounting Standards Update (ASC) Topic 220, Comprehensive Income*, Financial Accounting Standards Board.
- [6] International Accounting Standards Board. (2006). *Exposure Draft of Proposed Amendments to IAS No.1 Presentation of Financial Statements: A Revised Presentation*, U.K.: IASCF.
- [7] International Accounting Standards Board. (2011). *Presentation of Financial Statements (Amended International Accounting Standards No.1)*: U.K.: IASCF.
- [8] ASBJ. (2015a), *ASBJ Modification Accounting Standard No. 2, Accounting for Other Comprehensive Income*, Accounting Standards Board of Japan.
- [9] ASBJ. (2015b), *Foreword to the Exposure Draft on Japan's Modified International Standards (JMIS): Accounting Standards Comprising IFRSs and the ASBJ Modifications*, Accounting Standards Board of Japan.
- [10] Arthur, N., Clout, V. J., Wu, Y., & Zhou, X. (2017). *Benchmark beating using recycling of other comprehensive income*. Social Science Electronic Publishing.
- [11] Chiorean, R., Kirschenheiter, M.T., & Ramakrishnan, R.T. (2017). *Earnings Management through OCI Components*, Social Science Electronic Publishing.

- [12] Zhao, X., Zhao, K., & Wei, W. (2018). *Earnings Management using Other Comprehensive Income Items: A Multi-Case Study on Chinese Listed Companies*. In *2nd International Conference on Social Sciences, Arts and Humanities*, 198-201.
- [13] Inoue, S. (2020). *Earnings Management using Other Comprehensive Income Recycling: Evidence from Japan*. *Fukuoka University Business Series*, 65(2), 265-309.
- [14] Mechelli, A., & Cimini, R. (2013). *Is Comprehensive Income Value Relevant and Does Location Matter? A European Study*. *Accounting in Europe*, 11, 59-87.
- [15] Djaballah, A., & Fortin, A. (2021). *Value relevance of comprehensive income for the Canadian market*. *Accounting Perspectives*, 20(1), 49-77.
- [16] Jahmani, Y., Choi, H., Park, Y., & Jiayun Wu, G. (2017). *The Value Relevance of Other Comprehensive Income and Its Components*. *Econometric Modeling: Capital Markets - Asset Pricing eJournal*, 9(1), 1-11.
- [17] Lee, J., Lee, S.J., Choi, S., & Kim, S. (2020). *The Usefulness of Other Comprehensive Income for Predicting Future Earnings*. *Journal of Asian Finance, Economics and Business*, 7, 31-40.
- [18] Dechow, P., & Schrand, C. (2004). *Earnings Quality*. *The Research Foundation of CFA Institute*.
- [19] Kothari, S.P., & Zimmerman, J.L. (1995). *Price and return models*. *Journal of Accounting and Economics*, 20, 155-192.
- [20] Kanagaretnam, K., Mathieu, R., & Shehata, M. (2009). *Usefulness of Comprehensive Income Reporting in Canada*. *Journal of Accounting and Public Policy*, 28, 349-365.
- [21] Dong, M., Ryan, S.G., & Zhang, X. (2014). *Preserving amortized costs within a fair-value-accounting framework: reclassification of gains and losses on available-for-sale securities upon realization*. *Review of Accounting Studies*, 19, 242-280.
- [22] Chen, P.F., & Zhang, G. (2006). *How Do Accounting Variables Explain Stock Price Movements? Theory and Evidence*. *S&P Global Market Intelligence Research Paper Series*. (43): 219-244.
- [23] Zhang, G. (2014). *Accounting information and equity valuation: theory, evidence, and applications*. 1st ed. New York: Springer, 97-113.
- [24] Badertscher, B. A., Burks, J. J., & Easton, P. D. (2014). *The market pricing of other-than-temporary impairments*. *The Accounting Review*, 89(3), 811-838.
- [25] Detzen, D. (2016). *From compromise to concept? – A review of ‘other comprehensive income’*. *Accounting and Business Research*, 46, 760 - 783.