The Usefulness of Other Comprehensive Income Items in Japan

Abstract

This paper investigates the usefulness of the disclosure of Other Comprehensive Income (OCI) items in Japan along the two dimensions of value relevance and predictability. We consider whether the requirement for more transparent presentation of OCI items in the Statement of Changes of Equity (SCE) period have improved the usefulness of OCI. We find that OCI is value relevant incrementally over net income in the current period both in total OCI as well as for OCI component items, especially unrealized gains and losses on available for sale securities, deferred gains and losses on hedging instruments and foreign currency translation adjustments. Furthermore, we also find that the current year net income is also predicted by last year's OCI, coming mainly from unrealized gains and losses on available for sale securities and land revaluation excess. We also find that the usefulness (both value relevance and predictability) of OCI has increased when it was required to be disclosed in the Statement of Changes in Equity (SCE), compared to the pre-SCE period. Our results have policy implications as to the usefulness of the disclosure of OCI items that are more transparent and accessible to investors in the SCE and the Statement of Comprehensive Income (SCI), than when investors derived them from the balance sheet and notes of the financial statements.

JEL Classification: M40, M48

Keywords: Japan, Other Comprehensive Income, Value Relevance, Predictability

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1. Introduction

The increasing convergence of global reporting, by the adoption of International Financial Reporting Standards (IFRS) provides us with the context for this study. In particular, IFRS1 Presentation of Financial Statements, which mandates the disclosure of other comprehensive income (OCI) as part of an extended income statement, i.e. the Statement of Comprehensive Income (SCI), provides us with the motivation to explore the impact of the mandatory disclosure of OCI, over and above that previously required in the financial statements and notes to the accounts. Though IFRS is not yet adopted in Japan, the efforts of Japanese Accounting Standards Board to minimize differences with IFRS and in particular the introduction of the SCI for financial periods ending on or after March 31th, 2011, makes the question of its adoption and impact on investor decision making and firm value particularly pertinent to users of financial statements of Japanese companies.

This paper investigates the usefulness of the disclosure of OCI items in Japan along the two dimensions of value relevance and predictability, and by studying a time period that covers both the pre-Statement of Changes of Equity (SCE) and SCE disclosure periods, we consider whether the requirement for more transparent presentation of OCI items in the SCE period have improved the usefulness of OCI. This has policy implications as to the usefulness of the disclosure of OCI items that are more transparent and accessible to investors in the SCE and the Statement of Comprehensive Income (SCI), than when investors have to derive them from the balance sheet and notes to the financial statements.

We find that OCI is value relevant incrementally over net income in the current period both in total OCI as well as for OCI component items, especially unrealized gains and losses on available for sale securities, deferred gains and losses on hedging instruments and foreign currency translation adjustments. Furthermore, we also find that the current year net income is also predicted by last year's OCI, coming mainly from unrealized gains and losses on available for sale securities and land revaluation excess. On the basis that financial statement users find OCI to be value relevant in making investment decisions and that OCI helps to predict future net income, we also find that the usefulness (both value relevance and predictability) of OCI has increased when it was required to be disclosed in the Statement of Changes in Equity (SCE), compared to the pre-SCE period.

While prior Japanese evidence is mixed and covers the period before the introduction of the SCE, our evidence from the pre-SCE period is generally consistent with the more recent Japanese evidence (particularly evidence that covers the 2002 to 2009 period) that OCI items are value relevant and help predict net income. More importantly, our evidence from the SCE period shows that the usefulness (both value relevance and predictability) of OCI has increased when it was required to be disclosed in the SCE, compared to the pre-SCE period. On this basis, we argue that other comprehensive income disclosures would be useful to investors given that SCE disclosures were useful to investors. Further study would be needed to answer whether SCI disclosures are incrementally useful over SCE disclosures.

The remainder of the paper is organized as follows. In the next section, we describe the institutional background and reporting requirements in Japan, and summarize the prior international and Japanese evidence on OCI. We then discuss our data and methodology and our empirical results in the following two sections, respectively. The last section concludes our study.

2. Background and Literature Review

2.1. Institutional Background in Japan

As part of an effort toward the convergence with International Financial Reporting Standards, The Accounting Standards Board of Japan (ASBJ) has deliberated the establishment of an accounting standard for the presentation of comprehensive income. In April 2008, The ASBJ set up the Technical Committee for the Financial Statement Presentation to address discussions with IASB and FASB. In July 2009, The ASBJ released a Discussion Paper on Financial Statement Presentation. This was followed by a release of the Exposure Draft of Accounting Standard for Presentation of Comprehensive Income (Exposure Draft of Statement No.35) in December 2009. In June 2010, ASBJ released an Accounting Standard for Presentation of Comprehensive Income (ASBJ Statement No.25). This is applied to consolidated financial statements ending on or after March 31, 2011. In Statement No.25, comprehensive income and other comprehensive income are defined as follows:

> *Comprehensive income* is the change in net assets that is recognized in an entity's financial statements for a period, other than those changes resulting from direct transactions with equity holders in the entity's net assets. Equity holders in the entity's net assets include shareholders of the equity, holders of the share warrants issued by the entity and, for the purpose of consolidated financial statements, minority shareholders of subsidiaries of the entity (para.4).
>
> *Other comprehensive income* is a portion of comprehensive income that is not included in net income for the period or minority interest's share in it (para.5).

Statement No.25 also states that calculation of comprehensive income shall be presented as follows (para.6):

> (a) For non-consolidated financial statements, net income and additions or deductions of components of other comprehensive income;

(b) For consolidated financial statements, net income before adjusting minority interest and additions or deductions of components of other comprehensive income;

An important point to mention is that calculation and presentation of comprehensive income is based on traditional net income which remains in the statement. Our concern is that whether the OCI items are useful and whether it changed after the requirement for presentation of OCI items in Statement of Changes in Equity (SCE). Components of other comprehensive income stated in Statement No.25 are unrealized gains or losses on available for sale securities, deferred gains or losses on hedging instruments, and foreign currency translation adjustments.

Prior to the requirement for full comprehensive income reporting, there was a requirement for OCI items to be presented in the Statement of Changes of Equity (SCE) for financial periods ending on or after May 1st, 2006. Prior to the requirement for SCE, companies, if any, presented deferred hedge gains and losses which were required to present in the balance sheet as asset or liability. Unrealized gains and losses on other marketable securities and foreign currency translation adjustment were both required to be presented as net assets from financial periods starting from April 1st, 2001 and 2000 respectively. Before then, unrealized gains and losses on securities available for sale was presented in the footnote and foreign currency translation adjustment was presented in the balance sheet as asset or liability. As a preliminary study regarding the possible usefulness of comprehensive income reporting, we investigate whether the same items were useful when required to be disclosed under different presentation requirements. In the period where OCI items were required to be presented in the SCE, and in the period prior to the requirement for SCE reporting, when OCI items had to be derived from balance sheet items.

Some explanation is needed about Revaluation Excess Money for Land (land revaluation excess). This item was admitted to record as net assets under the "Act on Revaluation of Land". The purpose of the act was to help financial institutions and operating companies to re-capitalize their net assets. This Act was a temporary legislation which became effective from March 31st, 1998 to March 31st, 2002. Under this act, listed companies were admitted once to evaluate the amount of land for business purposes at market value. As this item will not be reduced unless the land is sold or in cases where impairment occurs, it remains in the balance sheet of companies that applied this Act in the past. In Statement No.25 revaluation excess money for land is not considered as components of other comprehensive income because this item was admitted only once under the temporary registration that is now not effective.

2.2. International Evidence

Comprehensive income, which is composed of net income and OCI, is different from the traditional concept of income which is that earned over a time period from an economic activity. OCI represents that change in wealth that is not earned but arises from changes in equity, other than transactions with owners as owners. This would include gains or losses from asset revaluation or foreign currency translation. To some extent this distinction is obfuscated, as conservatism in accounting often includes such losses in traditional income but not the gains.

Even though the disclosure of OCI has only recently been mandated in IFRS1 to be part of an extended income statement, the disclosure of OCI items has been available albeit in a less convenient package or presentation. Prior to the requirement for OCI to be appended to an extended income statement in the *Statement of Comprehensive Income* as part of total comprehensive income, there was a requirement for the presentation of a *Statement of Changes*

in Equity (SCE). Prior to the SCE, individual OCI items were often required to be disclosed separately in the notes to the accounts for each reserve account.

Several prior researchers have examined the usefulness of comprehensive income disclosures by examining their contemporaneous value-relevance. Cheng and Cheung (1993) examined the relation between abnormal returns and three measures of income: operating income, net income, and comprehensive income. Comparing the adjusted R^2s for the three models, their findings support two alternative scenarios- (a) net income and/or operating income are superior to comprehensive income as a measure of performance, or (b) that investors are "fixated" on net income, thus ignoring comprehensive income. In a similar spirit, Dhaliwal, Subramanyam, and Trezevant (1999) compared the adjusted R^2s for several models of returns on items of other comprehensive income. They document that the only component of comprehensive income that improves the earnings-return relation is the marketable securities adjustment, i.e., gains and losses on available-for-sale securities. Further analysis shows that this result is primarily due to firms in the financial sector, thus providing evidence that comprehensive income is not very useful for explaining returns.

More recent evidence tends to be supportive of the usefulness of comprehensive income disclosure. Biddle and Choi (2006) find evidence that SFAS130 comprehensive income dominates both traditional net income and fully comprehensive income in explaining equity returns, but in predictive ability, no definition clearly dominates. Chambers, Linsmeier, Shakespeare, and Sougiannis (2007), using a significantly smaller sample over the post-SFAS No. 130 period, provides evidence that total other comprehensive income is value-relevant in the period after it is mandatory to be disclosed post SFAS130. As SFAS130 allows the option to disclose the information in the statement of comprehensive income or the statement of changes

in equity, they find evidence that OCI is priced where it is disclosed in the statement of changes in equity. In a behavioral study Bamber, Jiang, Petroni, and Wang (2010) find that managers act as if the location of disclosure matters, i.e. whether it is in the statement of comprehensive income or statement of changes in equity.

Studies using international data have also found mixed evidence in support of the usefulness of comprehensive income disclosures. O'Hanlon and Pope (1999) find "little evidence that U.K. dirty surplus accounting flows contain value relevant items." Cahan, Courtenay, Gronewoller, and Upton (2000) did not find any evidence of incremental value relevance for such disclosures for New Zealand firms. However, Kanagaretnam, Mathieu, and Shehata (2009) using a sample of Canadian cross-listed firms with OCI disclosure, find some evidence that OCI are associated with price and market returns, though net income is still a better predictor of future net income relative to comprehensive income. Lin (2006) find that the voluntary disclosure by UK firms of other comprehensive income items to be value relevant.

2.3. Japanese Evidence

Prior Japanese evidence has been mixed. Wakabayashi (2002) investigated the value relevance of net income and one OCI item (i.e. the changes in unrealized gains and losses on securities available for sale presented in the footnote) in the pre-SCE period (1992-1999) for 6,655 firm-year observations of non-financial firms on the Tokyo Stock Exchange First Section. She finds that this OCI item has no incremental informational value over net income. For the period 2002 to 2004 and 1,826 firm-years of firms listed on the Tokyo Stock Exchange First Section, Ide (2006) investigated the value relevance of two OCI items (i.e. changes in foreign currency translation adjustments and unrealized gains and losses on securities available for sale). He finds

that foreign currency translation adjustments have value relevance. By using Japanese US cross-listed firms which were subject to SFAS No.130, Kubota and Takehara (2005) studied a sample of 130 firm-years between 1998 and 2004. They investigate the value relevance of three OCI items (i.e. foreign currency translation adjustment, unrealized gains and losses on securities available for sale, and minimum pension liability adjustment) and find some statistical significance for the last two items. Suda (2007) considers the value relevance of a more complete list of OCI items (i.e. unrealized gains and losses on securities available for sale, foreign currency translation adjustment and land revaluation excess) for the current year and for the previous year. He finds evidence that all three items are statistically significant, though the signs of the coefficients for unrealized gains and losses on securities available for sale in the previous period and land revaluation excess in the current period are in the opposite direction. His sample consists of 5,241 firm-years for the period 1999 to 2004 of firms listed on the Tokyo Stock Exchange First Section.

Wakabayashi (2010) updated her research with a more recent sample period of 2002-2009. Four OCI items are included (i.e. unrealized gains and losses on available for sales securities, deferred gains and losses on hedging instruments, foreign currency translation adjustments and land revaluation excess), but tested as an aggregate figure instead of in components. In value relevance tests with 15,493 firm-year observations, she finds that OCI has incremental information content over net income. Wakabayashi (2009) considered the predictability of OCI with 8,465 firm-year sample for 2002-2006, finding that when predicting one year ahead net income the predictability of net income is superior to that of CI. However, when CI is separated into net income and OCI, OCI helps to predict net income.

The mixed results shown in these studies may be due to different sample period, different OCI items being investigated (without controlling for the other items). Indeed, all of these studies were of the pre-SCE period, when the OCI items had to be derived from balance sheet and notes from the financial statements, except for Wakabayashi (2010) in which the last four year of her sample period overlap with that of the SCE period. By studying a time period that covers both the pre-SCE and SCE disclosure periods, we reconsider whether the requirement for more transparent presentation of OCI items in the SCE period have improved the usefulness of OCI.

3. Data and Method

Our initial sample consists of non-financial sector companies listed on all Japanese stock exchanges from 1998 to 2010, for firm-year observations from 2000 to 2010. Financial statement data are obtained from the *Nikkei NEEDS* (DVD) database, and stock price data are obtained from the *Nikkei NEEDS-FinancialQUEST* database.[1] Starting with 44,298 firm-year observations of financial statement data over the 11 year sample period, we have a final sample of 24,949 firm-year observations of 2,938 unique firms. We partitioned the sample period into pre-SCE period (for financial periods ending prior to May 1st, 2006) and SCE period (for financial periods ending on or after May 1st, 2006) into approximately equal number of years in each sub-period (six and five years, respectively).

[1] http://www.nikkei.co.jp/digitalmedia/service/needs.html

Following Chambers et al. (2007), Lin (2006) and Lin, Ramond, and Casta (2008) and Kanagaretnam et al. (2009), we use the following model to estimate the incremental value relevance of OCI over net income:

$$BHR_t = \beta_0 + \beta_1 \frac{NI_t}{MVE_{t-1}} + \beta_2 \frac{NI_{t-1}}{MVE_{t-2}} + \beta_3 \frac{NI_{t-2}}{MVE_{t-3}} + \beta_4 \frac{OCI_t}{MVE_{t-1}} + \beta_5 \frac{OCI_{t-1}}{MVE_{t-2}} + \beta_6 \frac{OCI_{t-2}}{MVE_{t-3}} + \varepsilon_t \quad (1)$$

where:

BHR = Buy-and-hold return from three months after the end of the previous financial year to three months after the end of the current financial year, adjusted for capitalization changes and dividend reinvestment, calculated from last traded closing price in the month (Daily Close type B adj. (incl. ex-dividend): STOCK'XBCLOSE).

NI = Current income (NFINANCIAL'FC058) , in million yen.

OCI = Other comprehensive income total and component items (in million yen).

From difference in balance sheet data items, between the current financial period and previous financial period for financial periods ending beginning January 2000 to that before May 2006:

SEC = Unrealised profit & loss from Securities Revaluation (NFINANCIAL'FB140)

FOR Foreign Currency Conversion Adjustment Amount (NFINANCIAL'FB142)

LAND Revaluation Excess Money for Land (NFINANCIAL'FB130)

OCI Sum of above items

For financial periods ending on or after May 1st, 2006 to March 2010 we collected data items from the *Statement of Changes in Equity*:

SEC = Unrealised gains & losses on Other Marketable Securities - Net change during Period (NFINANCIAL'FG152)

HED = Deferred Hedge Gains & Losses - Net change during Period (NFINANCIAL'FG155)

FOR Foreign Currency Translation Adjustment - Net change during Period (NFINANCIAL'FG158)

LAND Land Revaluation Excess, Total - Net change during Period (NFINANCIAL'FG161)

OCI Unrealised Gain & Loss, Total - Net change during Period (NFINANCIAL'FG164)

Consistent with value relevance studies (Easton and Sommers 2003; Francis and Schipper 1999), the independent variables are scaled by beginning period market value of equity (MVE). This is defined as the market value of equity (in million yen) three months after at the end of the previous financial year, calculated from daily stock close (STOCK'CLOSE) multiplied by number of shares issued of parent company at the end of the financial period (NFINANCIAL'FE032).

Following Biddle and Choi (2006) we use the following model to test the predictive power of OCI items:

$$NI_t = \beta_0 + \beta_1 \frac{NI_{t-1}}{TA_{t-1}} + \beta_2 \frac{NI_{t-2}}{TA_{t-2}} + \beta_3 \frac{OCI_{t-1}}{TA_{t-1}} + \beta_4 \frac{OCI_{t-2}}{TA_{t-2}} + \varepsilon_t \quad (2)$$

Consistent with studies of predictability and persistence (Sloan 1996), and that in archival financial accounting generally, the financial statement independent variables are scaled by average total assets (NFINANCIAL'FB067) (in million yen), instead of by market value of equity.

4. Results

4.1. Descriptive Statistics

Table 1 presents the descriptive statistics. The lag variables have almost identical value to that of the current period variables, as they are created from the lag of the current variable. There is an annual *BHR* mean of 2.9%. Net income (*NI*) is marginally positive, though total OCI is marginally negative. With respect to the OCI items, unrealized security gains (*SEC*) are positive whereas deferred hedge gains (*HED*) are zero on average, but negative for foreign exchange translations (*FOR*) and land revaluations (*LAND*).

The correlation statistics are set out in Table 2. NI_t (0.2084), OCI_t (0.1795) and SEC_t (0.2866) are correlated with *BHR*. And NI is correlated with NI of the previous period, as may be expected. SEC_t, FOR_t and $LAND_t$ are correlated with OCI_t, reflecting their relative contribution to total OCI for the period. Other than these items, the variables are not particularly correlated with each other.

4.2. Value Relevance

Table 3 presents the base value relevance results. In order the compare our results with prior Japanese evidence, columns (1) to (3) show the p-values after adjusting for robust standard errors. The main difference between the results before and after adjusting for clustering on firm and year are that NI_{t-2} loses statistical significance for the full and pre-SCE period, as does OCI_{t-2} for the pre-SCE period.

Columns (4) to (6) and all subsequent tables, show the p-values after adjusting for clustering on firm and year. The results are generally consistent with that without adjusting for clustering. For the full period NI_t is statistically significant (Column 4, coefficient=0.5252, p<0.01) with the magnitude for the pre-SCE period (Column 5, coefficient=0.6008, p<0.01) being higher than that of the SCE period (Column 6, coefficient=0.4010, p<0.01). NI_{t-1} is also statistically significant at the 5% level (or better) for the full and two sub-periods but with a negative sign (coefficients= −0.1359, −0.1154, −0.1773, respectively), reflecting some possible reversal of accruals from the prior period. In the SCE period, NI_{t-2} is also statistically significant (coefficient=0.1176, p=0.017), but not in the pre-SCE and full period.

Turning to total OCI, OCI_t is statistically significant at the 1% level for the full (coefficient=1.0290), with the magnitude of the coefficient for the SCE period (coefficient=0.7917) being higher than that for the pre-SCE period (coefficient=0.5902). With the value of the difference being about 0.2000 (similar to that for NI_t but in the reverse) it may be that investors are giving greater weight to OCI items relative to NI items in the SCE period compared to the pre-SCE period. OCI_{t-1} is also statistically significant across the periods at the 1% level. However, for the pre-SCE level the coefficient (0.0014) is in magnitude only 3% of that for the SCE period (−0.4670), and the sign reverses in the SCE period. This may indicate that in the pre-SCE period, the association of prior period OCI with return statistically but not economically significant. The negative sign for the SCE period may also indicate a reversal of the market reaction to OCI in the prior period. OCI_{t-2} items are not significant across the all periods.

Table 4 presents the value relevance results for individual OCI items, partitioned into the two sub-periods. The full period is not presented because deferred hedge gains and losses were not

disclosed until the SCE period. The results for *NI* are consistent with that in Table 3. For the pre-SCE period, NI_t is statistically significant and with a positive sign (Column 1, coefficient=0.5607, p<0.01), NI_{t-1} is statistically significant but with a negative sign (coefficient= −0.1131, p<0.01) but NI_{t-2} is not significant. For the SCE period, as in Table 3, NI_t has a positive sign (Column 2, coefficient=0.3983, p<0.01), NI_{t-1} a negative sign (coefficient= −0.1601, p<0.01) and NI_{t-2} a positive sign (coefficient=0.1050, p<0.01).

With respect to the OCI items, for the pre-SCE period, only SEC_t (coefficient=2.8539, p<0.01) and FOR_t (coefficient= −3.3786, p<0.01) are statistically significant. For the SCE period, SEC_t (coefficient=0.8852, p<0.01), HED_t (coefficient=1.1443, p<0.01) and FOR_t (coefficient=0.5769, p<0.01), but FOR_{t-1} and FOR_{t-2} have negative signs and are statistically significant (−1.3090 and −0.9729, respectively). *LAND* is not statistically significant for either period and for all time lags.

Overall, we conclude that net income is value relevant in the current period, but with some reversal for the prior period net income. And that OCI is value relevant incrementally over net income in the current period both in total OCI as well as for OCI component items, especially unrealized gains and losses on available for sale securities, deferred gains and losses on hedging instruments and foreign currency translation adjustments. With respect to the pre-SCE period, our evidence is consistent with Wakabayashi (2010) who find that aggregate OCI items are value relevant, and with Kubota and Takehara (2005), Ide (2006) and Suda (2007) who generally find that unrealized gains and losses on available for sale securities of the current period to be value relevant.

4.3. Predictability

In Table 5 we present the results of the predictability models for OCI totals. Across all periods, NI_{t-1} is significant at the 1% level and with a coefficient value of about 0.40. NI_{t-2} is also significant at the 1% level with a coefficient value of 0.0864 in the pre-SCE period and 0.1253 in the SCE period. This year's net income is also predicted by last year's OCI, with OCI_{t-1} but only in the SCE period (coefficient=0.2201, p=0.027).

Table 6 presents the results of the predictability models for OCI items. As with Table 5, NI_{t-1} is significant at the 1% level and with a coefficient value of about 0.40 for both periods, and NI_{t-2} is also significant at the 1% level with a coefficient value of 0.0885 in the pre-SCE period and 0.1198 in the SCE period. The results decomposing OCI into its components shows that the prior period OCI predictability is driven by unrealized gains and losses on available for sale securities (SEC_{t-1} coefficient=0.0887, p=0.017) and land revaluation excess ($LAND_{t-1}$ coefficient=0.0445, p=0.004). This may indicate that the unrealized gains and losses on available for sale securities and land revaluation excess in the previous period is realized in the current period. Unusually, FOR_{t-2} is statistically significant and with a negative sign (coefficient= −0.2234, p=0.006) but arguably consistent with the negative signs from the value relevance results in Table 4.

In summary, this year's net income is predicted by last year's net income and also that of the year before. This year's net income is also predicted by last year's OCI, with the OCI predictability driven by unrealized gains and losses on available for sale securities and land revaluation excess. With respect to the pre-SCE period, our evidence is also consistent with Wakabayashi (2009) who find that aggregate OCI items help predict net income.

5. Conclusions

As Japan debates the adoption of IFRS, and with the implementation of the Statement of Comprehensive Income for financial periods ending on or after May 1st, 2011, the usefulness of the disclosure of OCI items in Japan is of importance to users of financial statements of Japanese companies. This paper investigates the usefulness of the disclosure of OCI items in Japan along the two dimensions of value relevance and predictability, and by studying a time period that covers both the pre-SCE and SCE disclosure periods, we consider whether the requirement for more transparent presentation of OCI items in the SCE period have improved the usefulness of OCI. This has policy implications as to the usefulness of the disclosure of OCI items that are more transparent and accessible to investors in the SCE and the SCI, than when investors have to derived them from the balance sheet and notes to the financial statements.

We find that OCI is value relevant incrementally over net income in the current period both in total OCI as well as for OCI component items, especially unrealized gains and losses on available for sale securities, deferred gains and losses on hedging instruments and foreign currency translation adjustments. Furthermore, we also find that the current year net income is also predicted by last year's OCI, coming mainly from unrealized gains and losses on available for sale securities and land revaluation excess. On the basis that financial statement users find OCI to be value relevant in making investment decisions and that OCI helps to predict future net income. We also find that the usefulness (both value relevance and predictability) of OCI has increased when it was required to be disclosed in the Statement of Changes in Equity (SCE), compared to the pre-SCE period.

While prior Japanese evidence is mixed and covers the period before the introduction of the SCE, our evidence from the pre-SCE period is generally consistent with the more recent Japanese evidence (particularly evidence that covers the 2002 to 2009 period) that OCI items are value relevant and help predict net income. More importantly, our evidence from the SCE period shows that the usefulness (both value relevance and predictability) of OCI has increased when it was required to be disclosed in the SCE, compared to the pre-SCE period. On this basis, we argue that comprehensive income disclosures would be useful to investors given that SCE disclosures were useful to investors. Further study would be needed to answer whether SCI disclosures are incrementally useful over SCE disclosures.

The main limitation of this study is that it does not utilize the data from the SCI itself, relying on data items from the pre-SCE and SCE period. Further extensions of this study from more recent data for the financial periods ending on or after March 2011 would be useful.

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Table 1 Descriptive Statistics

N=24949	Mean	Std. Dev	Min	Max
BHR	0.0289	0.3891	-0.6771	1.6456
NI_t	0.0097	0.1634	-0.9496	0.2924
NI_{t-1}	0.0096	0.1687	-0.9993	0.3405
NI_{t-2}	0.0097	0.1634	-0.9496	0.2924
OCI_t	-0.0001	0.0627	-2.4634	1.4320
OCI_{t-1}	-0.0001	0.0627	-2.4634	1.4320
OCI_{t-2}	-0.0001	0.0627	-2.4634	1.4320
SEC_t	0.0018	0.0329	-0.1144	0.1458
SEC_{t-1}	0.0008	0.0321	-0.1140	0.1447
SEC_{t-2}	0.0018	0.0329	-0.1144	0.1458
HED_t	0.0000	0.0006	-0.0040	0.0027
HED_{t-1}	0.0000	0.0004	-0.0033	0.0013
HED_{t-2}	0.0000	0.0006	-0.0040	0.0027
FOR_t	-0.0011	0.0135	-0.0761	0.0432
FOR_{t-1}	-0.0014	0.0134	-0.0786	0.0413
FOR_{t-2}	-0.0011	0.0135	-0.0759	0.0432
$LAND_t$	-0.0003	0.0048	-0.0364	0.0192
$LAND_{t-1}$	-0.0003	0.0048	-0.0373	0.0192
$LAND_{t-2}$	-0.0003	0.0048	-0.0364	0.0192

This table presents descriptive statistics for regression variables for 24,949 firm-year observations of 2,938 unique firms listed on Japanese stock exchanges for the period between 2000 and 2010. The variables are defined as follows, and are winsorized at the 1st and 99th percentiles:

BHR = Buy-and-hold return from three months after the end of the previous financial year to three months after the end of the current financial year, adjusted for capitalization changes and dividend reinvestment, calculated from last traded closing price in the month.

NI = Current income

OCI = Other comprehensive income total

HED = Deferred Hedge Gains & Losses

FOR = Foreign Currency Translation Adjustment

LAND = Land Revaluation

The financial variables are scaled by the market value of equity (three months after at the end of the previous financial year, calculated from daily stock close multiplied by number of shares issued of parent company at the end of financial period.

Table 2 Correlation Statistics

	BHR	NI_t	NI_{t-1}	NI_{t-2}	OCI_t	OCI_{t-1}	OCI_{t-2}	SEC_t	SEC_{t-1}	SEC_{t-2}	HED_t	HED_{t-1}	HED_{t-2}	FOR_t	FOR_{t-1}	FOR_{t-2}	$LAND_t$	$LAND_{t-1}$
BHR	1																	
NI_t	0.2084	1																
NI_{t-1}	-0.0050	0.2935	1															
NI_{t-2}	-0.0170	0.1274	0.2418	1														
OCI_t	0.1795	0.0523	-0.0231	-0.0205	1													
OCI_{t-1}	0.0095	0.0017	-0.0116	0.0169	-0.0002	1												
OCI_{t-2}	-0.0091	0.0198	0.0445	0.0523	-0.0186	0.0114	1											
SEC_t	0.2866	0.0422	-0.0221	-0.0382	0.6580	0.0001	0.0037	1										
SEC_{t-1}	0.0930	0.0833	0.0495	-0.0103	0.0299	0.0207	0.0112	0.0194	1									
SEC_{t-2}	-0.0088	0.0431	0.0708	0.0423	-0.0112	0.0013	0.6580	-0.0238	0.0699	1								
HED_t	0.0471	0.0014	-0.0175	-0.0082	0.0561	-0.0003	-0.0363	0.0718	0.0122	-0.0567	1							
HED_{t-1}	0.0221	0.0191	0.0012	-0.0195	0.0452	0.0012	0.0260	0.0358	0.0920	0.0444	-0.1436	1						
HED_{t-2}	-0.0110	-0.0049	0.0214	0.0014	-0.0223	0.0044	0.0561	-0.0253	0.0354	0.0718	-0.0521	-0.0363	1					
FOR_t	0.0480	0.0387	-0.0155	-0.0088	0.3681	-0.0006	-0.0109	0.1091	0.1196	0.0777	0.0374	0.0723	-0.0094	1				
FOR_{t-1}	-0.0611	0.0404	0.0380	-0.0044	-0.1114	0.0490	0.0707	-0.1574	0.0912	0.1313	-0.0417	0.0537	0.0624	-0.0317	1			
FOR_{t-2}	-0.0341	-0.0134	0.0230	0.0385	-0.0860	0.0339	0.3679	-0.0356	-0.1099	0.1090	-0.0339	-0.0101	0.0374	-0.2306	0.0438	1		
$LAND_t$	-0.0136	0.0213	0.0150	0.0129	0.2550	-0.0001	-0.0347	-0.0573	-0.0183	-0.0498	-0.0042	0.0007	-0.0025	-0.0147	0.0073	0.0007	1	
$LAND_{t-1}$	0.0022	0.0057	0.0180	0.0075	0.0384	0.0062	0.0178	0.0240	-0.0582	-0.0209	0.0145	-0.0060	0.0045	-0.0112	-0.0154	0.0079	0.0455	1
$LAND_{t-2}$	0.0202	0.0067	0.0061	0.0213	0.0021	0.0006	0.2550	0.0275	0.0248	-0.0573	0.0123	0.0147	-0.0042	-0.0058	-0.0122	-0.0147	0.0249	0.0529

This table reports the correlation between BHR and net income and comprehensive income items. The variables are defined in Table 1.

Table 3 Value Relevance of Net Income and Total Other Comprehensive Income

	(1)	(2)	(3)	(4)	(5)	(6)
BHR_t	Full	Pre-SCE	SCE	Full	Pre-SCE	SCE
NI_t	0.5252***	0.6008***	0.4010***	0.5252***	0.6008***	0.4010***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
NI_{t-1}	-0.1359***	-0.1154***	-0.1773***	-0.1359***	-0.1154**	-0.1773***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.011)	(0.001)
NI_{t-2}	-0.0649***	-0.0503**	0.1176***	-0.0649	-0.0503	0.1176**
	(0.001)	(0.029)	(0.000)	(0.422)	(0.529)	(0.017)
OCI_t	1.0290***	0.5902***	0.7917***	1.0290***	0.5902***	0.7917***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.000)
OCI_{t-1}	0.0013***	0.0014***	-0.4670***	0.0013***	0.0014***	-0.4670***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
OCI_{t-2}	-0.0402	0.1936***	-0.1720	-0.0402	0.1936	-0.1720
	(-1.060)	(3.838)	(-1.495)	(-0.197)	(0.892)	(-0.728)
	(0.289)	(0.000)	(0.135)	(0.844)	(0.372)	(0.467)
Constant	0.0259***	0.1274***	-0.1102***	0.0259	0.1274**	-0.1102***
	(0.000)	(0.000)	(0.000)	(0.622)	(0.047)	(0.006)
N	24949	13686	11263	24949	13686	11263
Adj. R^2	0.0764	0.0618	0.0762	0.0764	0.0618	0.0762
F	126.1	184.5	74.86	108.1	477.0	232.1

*** indicates significance at p<0.01, ** p<0.05, and *p<0.1 two-tailed.
The coefficient values and p-values reported are adjusted for robust standard errors (columns 1 to 3) and standard errors clustered by firm and year (columns 4 to 6). The variables are defined in Table 1.

Table 4 Value Relevance of Net Income and Comprehensive Income Items

N=24949	(1)	(2)
BHR_t	Pre-SCE	SCE
NI_t	0.5607***	0.3983***
	(0.000)	(0.000)
NI_{t-1}	-0.1131***	-0.1601***
	(0.001)	(0.005)
NI_{t-2}	-0.0279	0.1050**
	(0.669)	(0.037)
SEC_t	2.8539***	0.8852***
	(0.000)	(0.000)
SEC_{t-1}	0.4062	-0.1840
	(0.415)	(0.418)
SEC_{t-2}	-0.1962	-0.0130
	(0.626)	(0.978)
HED_t		1.1443***
		(0.001)
HED_{t-1}		-0.6223
		(0.260)
HED_{t-2}		-0.9006
		(0.193)
FOR_t	-3.3786**	0.5769***
	(0.032)	(0.001)
FOR_{t-1}	-0.6729	-1.3090***
	(0.352)	(0.000)
FOR_{t-2}	0.9838	-0.9729*
	(0.337)	(0.055)
$LAND_t$	-0.0621	0.0423
	(0.900)	(0.354)
$LAND_{t-1}$	-0.5207	0.0875
	(0.201)	(0.281)
$LAND_{t-2}$	0.4396	-0.2095
	(0.575)	(0.142)
Constant	0.1052*	-0.1083***
	(0.054)	(0.008)
N	13686	11263
Adj. R^2	0.1177	0.0868
F	542.1	4.029

*** indicates significance at p<0.01, ** p<0.05, and *p<0.1 two-tailed.
The coefficient values and p-values reported are adjusted for standard errors clustered by firm and year (columns 4 to 6). The variables are defined in Table 1.

Table 5 Predictability of Net Income and Total Other Comprehensive Income

	(1)	(2)	(3)
NI_t	Full	Pre-SCE	SCE
NI_{t-1}	0.4331***	0.4123***	0.4475***
	(0.000)	(0.000)	(0.000)
NI_{t-2}	0.0983***	0.0864***	0.1253***
	(0.000)	(0.003)	(0.000)
OCI_{t-1}	0.1988**	0.0415	0.2201**
	(0.025)	(0.450)	(0.027)
OCI_{t-2}	-0.0100	-0.0277	-0.0876
	(0.845)	(0.631)	(0.373)
Constant	0.0065**	0.0096***	0.0030
	(0.025)	(0.000)	(0.560)
N	24949	13686	11263
Adj. R^2	0.2354	0.2020	0.2649
F	460.7	198.7	180.4

*** indicates significance at p<0.01, ** p<0.05, and *p<0.1 two-tailed.
The coefficient values and p-values reported are adjusted for standard errors clustered by firm and year (columns 4 to 6). The variables are defined in Table 1.

Table 6 Predictability of Net Income and Comprehensive Income Items

	(1)	(2)
NI_t	Pre-SCE	SCE
NI_{t-1}	0.4102***	0.4518***
	(0.000)	(0.000)
NI_{t-2}	0.0885***	0.1198***
	(0.002)	(0.000)
SEC_{t-1}	0.0411	0.0887**
	(0.131)	(0.017)
SEC_{t-2}	-0.0071	-0.0355
	(0.829)	(0.522)
HED_{t-1}		-0.0082
		(0.856)
HED_{t-2}		-0.0983
		(0.438)
FOR_{t-1}	-0.0699	0.0232
	(0.110)	(0.125)
FOR_{t-2}	-0.0734	-0.2234***
	(0.249)	(0.006)
$LAND_{t-1}$	-0.0326	0.0445***
	(0.657)	(0.004)
$LAND_{t-2}$	-0.0212	0.0315
	(0.690)	(0.237)
Constant	0.0092***	0.0028
	(0.001)	(0.604)
N	13686	11263
Adj. R^2	0.2032	0.2661
F	204.4	93.40

*** indicates significance at p<0.01, ** p<0.05, and *p<0.1 two-tailed.
The coefficient values and p-values reported are adjusted for standard errors clustered by firm and year (columns 4 to 6). The variables are defined in Table 1.