Information Content of Net Income and Other Comprehensive Income:
Investigation of Japanese Firms†‡

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Abstract

The paper investigates the information content of net income, other comprehensive income items, and “pseudo” comprehensive income for Japan. We choose changes in cumulative foreign currency translation adjustments and changes in the balance of unrealized gains and losses on securities available-for-sale as other comprehensive income items. The result from the relative information content test shows that net income is one of the most dominant income measures, which is also good or better than alternative pseudo comprehensive income numbers according to the Wald test. We also find that the other comprehensive income items contain incremental information content from the F-test. However, we find that signs of the estimated regression coefficients on these other comprehensive income are negative, contrary to our initial prior information. To further investigate this point, we classify firm samples based on firm characteristics: the proportion of foreign firms and distributions of cross-held shares by firms. We find that for foreign oriented firms, unrealized gains are good news, while for cross-held firms, unrealized gains are bad news. We reconfirm this tendency based on full-scale industry-wise investigations. Finally, we argue that, no matter whether the news is good or bad, individual investors could increase their expected utility by disclosing this other comprehensive income information. Moreover, accounting conservatism would strongly recommend disclosure of bad news. Because other comprehensive income items are already disclosed as dirty surplus in Japan, the extra cost of disclosing those items in comprehensive income reports will be minimal.
1. Introduction

This paper addresses a question of whether the disclosure of comprehensive income as well as other comprehensive income items helps investors assess firms’ future stock returns better than the net income currently reported in Japan.

The FASB statement FAS 130 (FASB, 1997) requires firms who abide by the U.S. GAAP to disclose other comprehensive income and comprehensive income. These figures can be disclosed either in income statements or in a separate statement of stockholders’ equity. Prior to the release of this FASB statement, however, items of other comprehensive income were treated as dirty surplus items and charged directly to balance sheets in the U.S. as is the case currently in Japan.

According to current Japanese GAAP, it is required that only three items of other comprehensive income are reported as dirty surplus items; i.e., changes in foreign currency translation adjustments, changes in unrealized gains and losses from securities available-for-sale, and revaluation differences of land properties. The format of the disclosure is such that these numbers are directly charged to equity items of the balance sheets. Note that the disclosure of the last item is optional and to be reported only when firms choose to do so.

For future imperative convergence of Japanese accounting standards with the International Accounting Standards (IASB, 2005), empirical descriptive assessments of how and which comprehensive income and other comprehensive income items in Japanese financial statements are related to stock returns are an important task which academic researchers want to answer. Hopefully, our finding on stock returns helps

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1 There are some Japanese companies who choose to use the U.S. GAAP, most of which are companies whose stocks are listed in the U.S. market. Although the number of these companies varies year to year, it is approximately between 25 and 30 firms.

2 The Japanese Accounting Standards Board is trying to conform to the International Accounting Standards by 2011.
Japanese accounting standard setters to construct useful accounting disclosure policies based upon the purpose of disclosing financial statements for their multiple users.

Thus, in this paper we investigate the information content of comprehensive income and other comprehensive income items disclosed as dirty surplus among Japanese companies. Since net income is the bottom line number in income statements in Japan, we add the combinations of other comprehensive income numbers, and construct alternative comprehensive income numbers. We test the information content of these constructed numbers as well as the net income per se and other comprehensive income numbers.

The paper proceeds as follows. We conduct empirical tests to investigate information contained in hypothetical comprehensive income, employing a standard research framework and test the information content of accounting numbers. For this purpose we employ both the relative information content test proposed by Biddle et al. (1995) and the incremental information content test with the $F$-test.

Because the comprehensive income disclosure is not yet required in Japan, in this paper we have to construct a “pseudo” comprehensive income using “net income after tax” as a benchmark figure and add other comprehensive income items to it. Although there are only three items of other comprehensive income which are currently disclosed in the balance sheets in Japan, we choose two of them: foreign currency translation adjustments, and unrealized gains and losses from securities available-for-sale by the reason we will explain in the next section. Thus, we add combinations of the above two other comprehensive income items to net income, and construct various forms of the “pseudo” comprehensive income numbers. Given these

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3 Since these other comprehensive income numbers are recorded on balance sheets using the statutory maximum corporate tax rate on an after tax base, we simply add back these amounts to the net income after tax.
alternative measures of comprehensive income numbers as well as two items of other comprehensive income we conduct several tests of information content in the paper.

Section 2 discusses the motivation of the current study and surveys previous literature in the field. Section 3 describes our data and the testing method. Section 4 demonstrates the results of relative and incremental information content tests. In section 5 we first split our total sample into sub-categories based on proportions of foreign sales and the ratio of securities available-for-sale to equity of each firm and examine how the signs of the information content of other comprehensive income items are different between these sub-categories of sample firms, and second, we confirm this result with industry-wise observations. Section 6 concludes.

2. Motivation and the Previous Studies

2.1 Motivation to Investigate Accounting Information from Japan

In Japan the comprehensive income disclosure is not currently enforced, while some items of other comprehensive items are directly charged to equity and disclosed as dirty surplus items on the balance sheets. As the recent convergence efforts by the IASB and the FASB move toward the disclosure of the comprehensive income across many countries (Doupnik and Perera, 2007), it would be imperative to empirically test the possible information content contained in comprehensive income and other comprehensive income items for Japanese companies, because they still use the dirty surplus disclosure of the selected items of other comprehensive income in their accounting standards.4 The current research is one of few empirical inquiries using Japanese data or other Asian countries, which try to answer this question and hopefully

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4 Penman (2001, p. 239) shows the various dirty surplus items currently found in U.S. financial statements.
will help Japanese accounting standard setters suitably construct disclosure rules relating to comprehensive income numbers.

The following three items are reported as dirty surplus in Japanese financial statements: foreign currency translation adjustments, unrealized gains and losses from securities available-for-sale, and revaluation differences of land properties. The accounting standards for foreign currency translation adjustments were revised in October 1999 along with the newly enforced disclosure of consolidated financial statements in that year. As for accounting standards for reporting unrealized gains and losses from securities available-for-sale, they were first released in January 1999. As aforementioned, land properties can be revaluated only once during the 1998 to 2002 period when firms choose to do so. We do not include revaluation differences of land properties because it was a valid disclosure rule with options for limited periods of time. Accordingly, we select changes in cumulative foreign currency translation adjustments ($\triangle FCT$) and changes in the balance of unrealized gains and losses on securities available-for-sale ($\triangle SEC$) as candidates of the components of other comprehensive income. In this way we construct the pseudo comprehensive income with these two items of other comprehensive income.

In this research we hypothetically construct “pseudo” comprehensive income using the net income after tax as our benchmark measure and add the other comprehensive income items, which are all recorded on an after-tax basis on balance sheets with the statutory maximum corporate tax rate, effectively 40.87 per cent during our

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5 Moreover, companies in Japan do not have to disclose minimum pension liabilities as dirty surplus item on the balance sheet. While less than 30 Japanese firms listed on the Tokyo Stock Exchange (TSE) are preparing their financial statement based on the U.S. GAAP and disclose minimum pension liabilities, available data for minimum pension liabilities are very limited and we decided not to include minimum pension liabilities as other comprehensive income in our test.
observation period.

The research agenda we raise in this paper can be summarized in two questions stated below. These are proposed, first, in view of the fact that one of the ultimate objectives of financial reporting based on Japanese GAAP is primarily to construct the meaningful and reliable net income number. For this purpose the relative information content test of the “pseudo” comprehensive income numbers versus the net income is called for. Second, even though currently the other comprehensive income items are only disclosed as dirty surplus items in Japan, we explore the information content of these disclosed numbers for future disclosure in income statements. For this purpose the incremental information content of these other comprehensive income numbers is to be used.

Thus, we raise the two research questions as follows.

**Q1:** Does the reporting of comprehensive income numbers enhance the information content relative to the reporting of solely the net income numbers in predicting abnormal stock returns?

**Q2:** Does each item of other comprehensive income possess incremental information content which is not yet contained in the net income numbers in terms of predicting abnormal stock returns?

Note that our test of information content utilizing the ‘pseudo’ comprehensive income is a test under *ceteris paribus* conditions of the currently disclosed financial statement formats, and even if we were to be able to find evidence which supports the
information content of comprehensive income and other comprehensive income items, it would not unanimously provide us with concrete policy implications as to the usefulness of comprehensive income disclosure rules whenever such a rule is in fact enacted. The reasons are twofold. First, by the usage of Ijiri (1975, Ch. 3) the “principal” for Japanese accounting reporting would currently be the net income after a tax number which we have chosen as our benchmark figure, and, in this sense, the predictions from our empirical findings may not be easily extended to a new disclosure regime unless people’s conception and behavior are safely assumed to be the same as before. Second, as Holthausen and Watts (2001) argue, the found association between the abnormal returns and the accounting numbers may not directly lead us to any accounting standard setting policy statement, mainly because the equity holders are considered to be the only recipients of accounting information in these studies. Thus, such a finding may not be sufficient statistics for other stakeholders surrounding the firms, although it is true that the additional information content of the accounting numbers found can increase the \textit{ex ante} expected utility of the individual equity investors (Demski, 2003, Ch. 6), assuming that the additional disclosure is costless (Gonedes and Dopuch, 1974, p. 77). Also, from an accounting conservatism viewpoint, we claim that bad news should be disclosed, if it is found empirically to be the case.

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6 We thank Takashi Yaekura for raising this point during the presentation of the earlier version of the paper at the 2005 Japan Accounting Association Annual Meeting.

7 In other words, we are also implicitly assuming that it does not matter how these numbers are reported. Hirst and Hopkins (1998) and Hirst et al. (2001) conduct experimental studies to investigate whether the different formats of comprehensive income reporting matter, and both of these studies conclude that the analysts are conditioned in the particular way that comprehensive income is presented.

8 Barth et al. (2001) counter argue against their viewpoint. We will not further delve into this controversy, but note that the first caution against applying evidence from empirical accounting studies directly to a normative accounting standard setting was raised by Gonedes and Dopuch (1974, p.115), saying, “available evidence cannot be used to fully resolve the main issues with which these bodies deal,” just around the transition time from APB to FASB.

9 Note the Sarbanes-Oxley Act Sec. 305 (b) states that the SEC will act upon any equitable relief for the benefit of “investors.”
In spite of those limitations in our research, we believe that it is a worthwhile empirical exercise to conduct, and the finding whether there exists (or does not exist) information content in this “pseudo” comprehensive income and/or in other comprehensive income items will provide us with a valuable clue in assessing the value of disclosed accounting information in Japan. We believe our study adds evidence to the international accounting field.

2.2 Previous Value Relevance Studies on Comprehensive Income

Using the U.S. sample during the pre-SFAS 130 period, Dhaliwal et al. (1999) constructed the “as if” SFAS 130 comprehensive income and tested the value relevance. They find that their “as if” SFAS 130 comprehensive income numbers do not exhibit a stronger association with stock returns than the conventional net income number. The study also finds that the available-for-sale marketable securities adjustments among financial services firms are significantly and incrementally priced. Furthermore, Biddle and Choi (2006) investigate the information content of the “as if” other comprehensive income,” using the AR (1) model for income generating process. Contrary to the finding by Dhaliwal et al. (1999), they find evidence which supports the existence of information content of this “as if” other comprehensive income for the U.S. data. Later, Chambers et al. (2005) use the sample of the observation period four years prior to (1994-1997) and four years post (1998-2001) introduction of SFAS 130 for U.S. data. They find a stronger association of stock returns with comprehensive income than with the reported net income for post-SFAS 130 periods, but not for pre-SFAS 130 periods. These results, though not strong, provide evidence that the

10 Dhaliwal et al. (1999) use the terminology “as if” comprehensive income, while we use the terminology “pseudo” comprehensive income.
increased transparency of new regulations in SFAS 130 enhance the association between stock returns and comprehensive income. Furthermore and more interestingly, they find that different kinds of comprehensive income components are informative for different industries, of which point we will also explore in this paper.

As to the international evidence, Kanagaretnam et al. (2005) find evidence of the value relevance of the components of comprehensive income, using a sample of Canadian firms that are cross-listed in the U.S. during post-SFAS 130 periods. In the case of U.K. firms, O’Hanlon and Pope (1999) do not find evidence that the components of “other comprehensive income” are value relevant, while recently Lin (2006) finds that other comprehensive income, which is defined as “all the recognized gains and losses attributable to shareholders such as asset revaluations and foreign currency translation gains and losses,” (Lin, 2006, p. 1111) possesses significant incremental price relevance. As for further evidence for European countries, Ramond et al. (2007) show strong evidence to support the view that comprehensive income be reported, as recommended by the joint IASB/FASB project on “Performance Reporting,” using the multinational data from Germany, France, Italy, and Spain as well as from the U.K.

In New Zealand it is required that firms report components of other comprehensive income in the Statement of Movements in Equity, according to the Financial Reporting Standards No.2. Cahan et al. (2000) use a sample of firms in New Zealand and investigate the price behavior around the implementation event dates in January 1995 of a FRS 2 release. They compare the value relevance of the components of other comprehensive income before and after the enactment of reporting requirements. They do not find any evidence that components of other comprehensive income are valued
differently even after the reporting was required by FRS No. 2. This study is unique in
the sense that the New Zealand GAAP for other comprehensive income reporting is
different from the U.S. GAAP, composed solely of two components: foreign currency
translation adjustments and upward asset revaluation differences.

Finally, even though we are not aware of any other evidence from Asian countries
except for Japan, Wakabayashi (2005) investigated the association between stock
returns and comprehensive income, using the Vuong test for Japanese data. Her finding
is similar to ours, although the sampling designs and definitions she uses are different
and she also includes the revaluation differences of the land properties as other
comprehensive income. As we will discuss below, her finding is similar to ours, and
accordingly, the results for Japanese data seem to be robust. Moreover, Kubota et al.
(2006) examine the relationship between management compensation and alternative
income numbers for the Japanese firm sample and find that there is no difference in
relative information content between net income and the “as if” comprehensive income
for their Japanese sample.

3. Data and the Estimation Method

3.1. Data Descriptions

Our sample consists of the firms listed in the first section of the Tokyo Stock
Exchange. In order to be included in our data, we require that at least one item of other
comprehensive income numbers are disclosed for each firm for each year. We also
exclude financial firms from our data because their financial representations and the
managerial motivations of handling financial assets and liabilities are fundamentally
different. The financial statements data starts from fiscal year 2000 and ends in 2004,
which covers five years of observations. We include in the sample only firms whose fiscal year end on March 31st because more than 90% of Japanese firms use the March fiscal year end and we want to align the data to accurately measure the stock price movements around the fiscal year end. The most recent observation is from financial statements of March 31st, 2005, which is the end date of fiscal year 2004.

With the above March fiscal year end criteria along with an additional imposed condition that at least one of the other comprehensive income items is non-zero, we obtain the minimum number of the sample of 1,198 firms in 2005 and the maximum number of 1,305 firms in 2004 during our sampling period. The total firm-years are 4,994.

Cumulative abnormal stock return (CAR) is defined as an annualized Jensen’s alpha which is measured based on the unconditional Fama and French (1993) three factor model.¹¹ In our regression analyses, we use 12 monthly return observations from 8 months before March 31st to 3 months after March 31st. We use the Fama and French model to measure the stock return abnormal performance because this model is widely accepted as a standard asset pricing model both in the U.S. as well as in Japan (Jagannathan et al., 1998). It is also because Beaver (2002, p. 455) refers to the effect of market-to-book ratio in correctly measuring the unexpected component of stock returns based on the market efficiency theory. Thus, we try to associate the surprise components of the stock price with the surprise component of accounting numbers using the AR (1) expectations formation process of the accounting number time series.

As for capital market data, the data source for accounting variables is the Nikkei NEEDS database provided by Nihon Keizai Shinbun Inc. and the source data for the

¹¹ We also computed the cases for raw returns and abnormal returns from the CAPM. Detailed results are available upon request from the authors.
monthly return series is the Nikkei Portfolio Master database provided by the Nikkei Media Marketing, Co., Ltd. We use the intersection of these two data sets. Both data sources are free from survivorship bias and new listing bias.

Table 1 presents the basic statistics of the variables used. All variables are deflated by book values of total assets at the end of the prior period.\textsuperscript{12} We treat the abnormal observations of accounting variables in the following way; i.e., for any observations above 99 percentile or less than 1 percentile of each variable we assign the same value at these 99 or 1 percentile values by the method of winsorizing.\textsuperscript{13}

Panel A of Table 1 reports Pearson correlation numbers in the lower left off diagonal elements and the corresponding \( p \)-values in the upper right off diagonal elements. The correlation between net income (\( NI \)) and comprehensive income (\( CI=NI+\triangle FCT+\triangle SEC \)) is 0.967 and this number is slightly lower than the comparable number of 0.9991 for the U.S., whose result was found by Biddle and Choi (2006). Also, we notice that the correlation between other comprehensive income (\( OTH=\triangle FCT+\triangle SEC \)) and net income (\( NI \)) is negative at -0.007. It seems that the largest impact for these negative correlation numbers come from the correlation between net income and changes in foreign currency translation adjustments with the corresponding value of -0.069.

\textsuperscript{12} As a denominator we also used the end of the previous period’s market value of equity as used in Biddle and Choi (2006), but the results were not substantially different. The results are available upon request from the authors.

\textsuperscript{13} We also computed by deleting the abnormal observations and the results were not remarkably different. We used winsorizing, because in the industry-wise analysis the number of sample observations was crucial.
Panel B of Table 1 reports the summary statistics of alternative income measures and abnormal stock returns. We find that the mean of comprehensive income ($CI$) is 1.590 and it is higher than that of net income at 1.376. The differences in median values also look similar with 1.876 and 1.618, respectively. However, the 25 percentile figure for comprehensive income is 0.187 and it is much lower than one for net income of 0.399. On the other hand, 75 percentile and 95 percentile of comprehensive income are larger than those of net income. It suggests that empirical distributions of comprehensive income possess fatter tails, probably more so at the upper most right hand side of the density function.

We find that the mean of other comprehensive income ($OTH$) and that of changes in the balance of unrealized gains and losses on securities available-for-sale ($\Delta SEC$) are positive with the values of 0.214, and 0.260, respectively. On the other hand, the mean of changes in cumulative foreign currency translation adjustments ($\Delta FCT$) is negative at -0.047. The average of the cumulative abnormal stock returns ($CAR$) is 1.091 per cent per annum as can be seen in Panel B of Table 1.

### 3.2 Testing Equations

In order to conduct tests of both relative information content and incremental information content, we use the following testing framework. For the relative information content test we employ the Wald test proposed by Biddle et al. (1995) and a standard $F$-test. The former test is based on the test statistics originally constructed by Hotelling (1940) for the best model choice with prediction criteria that avoids the problem of not being able to estimate nuisance parameters. The original proof by Hotelling is conducted under the homoskedastic assumption and is valid for the small
sample. Biddle et al. (1995) adjusted this statistics to allow for the heteroskedasticity, utilizing Rao-Kramer lower bound covariance matrix estimators (White, 1980). Hence, the efficiency and property of the uniform and most powerful test should be guaranteed for the large sample under suitable regularity conditions (Amemiya, 1985, Ch. 4). Because Wald statistics by Biddle et al. (1995) are a straightforward extension of Hotelling’s original test statistics, the selection of the best model based on adjusted \( R^2 \)-square numbers and magnitudes of the corresponding Wald statistics are isomorphic, and we can choose the best model based on the pure comparison of adjusted \( R^2 \)-square numbers as was originally demonstrated by Hotelling (1940).\(^{14}\)

As we will discuss below, the alternative hypotheses of our incremental information content test are non-nested. Both the likelihood ratio test by Vuong (1989) and the \( J \)-test are known to be able to cope with this problem, but we decide to choose the Wald statistics proposed by Biddle et al. (1995). It is because the i.i.d. assumption, which is necessary for the Vuong test is hardly satisfied for accounting data, and also because it is well known that the \( J \)-test erroneously rejects the null hypothesis when it is in fact true (Biddle et al., 1995, p. 10 and footnote12 and 13), and thus resulting in serious Type I errors.\(^{15}\)

For the relative information content test we simply compare the performance of the model as ranked by the magnitude of the adjusted \( R \)-squares and test a null hypothesis of “no difference” in information content by testing the significance of the difference in Wald statistics.\(^{16}\) If we were to find that it is significantly different, we would be able to conclude that an information variable which possesses larger adjusted \( R \)-square

\(^{14}\) The Appendix section of the current paper explains the detail of this statistic.
\(^{15}\) We also estimated Vuong likelihood ratio tests and the results were not remarkably different.
\(^{16}\) See our Appendix section.
values dominates others with smaller adjusted $R$-square values.

The formal testing procedures are as follows. First, we test the relative information content of net income ($NI$) versus our pseudo comprehensive income ($CI$), in which these two items of other comprehensive income are added to the net income of each. In this case alternative models are non-nested, and this can be described as a system of equations as in a following equation (1). In this system of equations the dependent variable is the cumulative abnormal return, $CAR_t$ computed from the standard unconditional Fama and French three factor model. Note that the variable with one-lag comes into the regression equation because we assume that an informational signal is constructed as a surprise component of the accounting variable as in Biddle et al. (1995). Furthermore, we assume the AR (1) process for accounting numbers for Japanese data. Note Biddle et al. (1995) demonstrate that in this case the relationship

\[ E(\beta_2) = -\phi_1 E(\beta_1) \]

holds wherein $\phi_1$ denotes the AR (1) coefficient for time series of the accounting numbers. Thus, as long as the coefficient $\phi_1$ is positive, which is likely the case for majority of the firms, the signs of $\beta_1$ and $\beta_2$ should be opposite each other. Note that all the original variables are denominated by the book value of the total assets at the beginning of the period through our analysis.

\[
\begin{align*}
CAR_t &= \alpha + \beta_1 NI_t + \beta_2 NI_{t-1} + \varepsilon_t, \\
CAR_t &= \alpha + \beta_1 CI_t + \beta_2 CI_{t-1} + \varepsilon_t.
\end{align*}
\]

As we indicated above, in equation (1) the two equations are non-nested. Hence, in testing the relative information content, we need to test a hypothesis that indicates the

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17 Kubota et al. (2005) investigate time series properties of net income, accruals, and cash flow for Japanese data of a similar sampling period and report that the AR(1) process model dominates a random walk model for the earnings series denominated by total assets.

18 Kubota et al. (2005) show it is indeed the case for Japanese firms.
two models are not significantly different by particular Wald statistics as proposed by Biddle et al. (1995).\textsuperscript{19} Thus, the sequential $F$-tests start from the full information equation (2).

$$CAR_t = \alpha + \beta_1 NI_t + \beta_2 NI_{t-1} + \beta_3 CI_t + \beta_4 CI_{t-1} + \epsilon_t,$$  \hfill (2)

Then, the sequential residual differences between the full information equation and the missing equation are computed from the simultaneous estimation of the system of the equations. The hypothesis can then be tested by imposing the quadratic constraints while estimating the maximum likelihood functions.\textsuperscript{20} With this estimation process, the necessary Wald statistics are computed and the incremental information content test can be conducted (Biddle et al. 1995).

Second, as for the incremental information content test, we use a standard analysis of variance test which is nothing but a standard $F$-test because in this case the models are nested. For example, the full model is depicted as in a following equation (3), and for each run one variable and also the one-lagged variable of the same variable are deleted from the original estimating equation at each stage, and the analysis of the variance are conducted using the $F$-test. We also use White’s corrections to compute the variances in these estimations. For the full equation case, we have three variables, $NI$, $\triangle SEC$, $\triangle FCT$ and the lagged values of those as independent variables and the dependent variable is the abnormal return, $CAR$ as follows.

\textsuperscript{19} Biddle, Seow, and Siegel (1995) derive this statistic and show they are exact under the homoskedastic and uncorrelated case and also can be extended to the heteroskedastic case.

\textsuperscript{20} As originally demonstrated by Hotelling (1940), the weighted averages of the prediction residual errors and the estimation residual errors are computed so that the unknown parameters cancel out each other. The extended method under the heteroskedasticity assumptions was derived by Biddle et al. (1995, equation 13), which we use for our tests.
\[ CAR_i = \alpha + \beta_1 NI_i + \beta_2 NI_{i-1} + \beta_3 \Delta SEC_i + \beta_4 \Delta SEC_{i-1} + \beta_5 \Delta FCT_i + \beta_6 \Delta FCT_{i-1} + \epsilon_i \]  
\[ (3) \]

Given these base line regression equation we test both the relative information content and the incremental information content of net income, other comprehensive income, and comprehensive income as below.

4. Information Content Tests

4.1. Results from the Relative Information Content Test

In this subsection, we first report the result from the following regressions of the form (4). Since we have seven candidates for a firm’s accounting income measure, \( NI \), \( CI \), \( NI + \Delta FCT \), \( NI + \Delta SEC \), \( OTH \), \( \Delta FCT \) and \( \Delta SEC \), we run 7 different combinations of regressions of the following form.\(^{21}\)

\[ CAR_i = a + b_1 [NI_i + \text{Added Component(s)}_i] + b_2 [NI_{i-1} + \text{Added Component(s)}_{i-1}] + \epsilon_i \]  
\[ (4) \]

Table 2 about here

Table 3 about here

Table 2 reports the regression coefficients which we obtain by conducting the regression analysis of the form in (4). It is not surprising that the adjusted \( R \)-squared

\(^{21}\) Although the tests of solely \( OTH \), \( \triangle FCT \), or \( \triangle SEC \) are not of our direct interest, we are showing the result in the table just for confirming purposes of the nature of these variables.
are low because our dependent variable, the annualized Jensen’s alpha, is estimated based on the Fama-French 3 factor model after all the risk factors have been controlled for.\textsuperscript{22} Table 3 shows the results of the Wald test. In Table 3, the numbers in the lower triangular matrix are Wald statistics and their corresponding $p$-values are reported in the upper triangular matrix.

The most important finding from Tables 2 and 3 is that net income ($NI$) provides significantly greater relative information content than comprehensive income ($CI$). As we can see from Table 2, the net income is the second best with the $R$-square value at 0.022. Although the third best one is comprehensive income ($CI$), the adjusted $R$-square value decreases to 0.017. The Wald statistics between $NI$ and $CI$ is 5.750 and it is significant at the 5% level whose corresponding $p$-value is 0.016.

Net income plus changes in cumulative foreign currency translation adjustments, $NI + △FCT$, attains the highest adjusted $R$-square value with 0.023 for our pooled sample. However, in the relative information content it is indifferent to $NI$. The Wald statistic between $NI$ and $NI + △FCT$ is 1.046 and its corresponding $p$-value is 0.306 and not significant. The fourth best measure is $NI + △SEC$. Thus our Wald test results reported in Table 3 suggest that its relative information content is significantly smaller than that of $NI$, and is indifferent to that of $CI$.

In the previous Table 2 we also find that the coefficients for the comprehensive income variables, $NI$, $CI$, $NI + △FCT$, and $NI + △SEC$, show contemporaneously positive signs and negative signs with the first lag. In this respect we can interpret that the market participants in TSE interpret the unanticipated increase in net income and/or

\textsuperscript{22} Naturally, the $R$-square values become larger for the raw return case without risk adjustments, but as we choose the surprise component of accounting numbers to find association with abnormal returns, we do not report the result for raw return case. The results are available upon request from the authors.
comprehensive income as a positive signal for the firm.

To sum up the results of the relative information content tests, we find that net income is not indistinguishably informative from pseudo comprehensive income alternatives. However, it is yet to conclude that other comprehensive income items are not very informative. We will have to further investigate the existence of incremental information content of these items before we conclude about the information content contained in comprehensive income and other comprehensive income numbers. We will do this in the next sub-section using the incremental information content test.

4.2. Results from the Incremental Information Content Test

In this sub-section we report the result from the incremental information content test. By starting from the full equation (3), we delete one variable each time along with the lagged variable of the same variable and conduct the analysis of variance test.

Table 4 reports the results from the incremental information content test. In the columns from the utmost left we report the estimated coefficients of the regression equation (4) above, the corresponding \( p \)-values, the adjusted \( R \)-squares, \( F \)-values, and the corresponding \( p \)-values from the analysis of the variance test. Each row shows in the table shows the different model specification where the blanks mean the set of the variable are not included.

From the \( F \)-values in the second row we find that the incremental information content of \( \Delta FCT \) is significant at the 10% level with the \( p \)-value 0.057, and from the
third row that for $\triangle SEC$ is significant at the 5% level with the $p$-value 0.026. The results support that other comprehensive income items have incremental information contents. Note, however, that the regression coefficients for $\triangle SEC$ are negative without exceptions and those for $\triangle FCT$ are also negative except for two cases. These results are puzzling to us because it means that the unanticipated increase in other comprehensive income is regarded as bad news in the stock market.

In the next section, we investigate how and to which direction the information content contained in other comprehensive income is impounded into stock prices by focusing on the differences of firms’ characteristics and try to investigate into this ‘negative-sign puzzle,’ before we conclude whether those other comprehensive income items ought to be disclosed as separate items in addition to the net income when comprehensive income disclosure is required in Japan with the future convergence to International Accounting Standards.

5. Further Investigation into Other Comprehensive Income Items

5.1. Negative Signs and Firm Characteristics

Even though we confirmed the existence of incremental information content of foreign currency translation adjustments and one of unrealized gains and losses from securities available-for-sale in the previous section, we also find that regression coefficients are negative in some cases, and that our information content test produced results which are contrary to our prior contentions. Note, however, that the finding that the coefficients for changes in cumulative foreign currency translation adjustments become negative incidentally coincides with the recent finding for U.S. data by Louis (2003) and it is also in accordance with another empirical result found in Japanese data,
for example, by Wakabayashi (2005). On the other hand, it is opposite to the finding for U.S. data by Pinto (2005) and for Canadian data by Kanagarenam et al. (2005).

To further investigate how information content contained in other comprehensive income items is impounded into stock prices, while paying particular attentions to the signs of the coefficients, we further divide our total sample based on firms’ characteristics and try to investigate further this phenomenon. For this purpose, we define two new variables that can purportedly represent firms’ characteristics of our interests: i.e., proportions of foreign sales and a ratio of available-for-sale securities to equity.

We construct a new variable, the proportions of foreign sales, with the ratio of sales in foreign countries to the total sales, which purportedly measure the degrees to which the firms’ sale are dependent abroad. This variable highlights the informational role of foreign currency translation adjustments. Note foreign sales activity or foreign investment is considered to be a risky business, and it is also subject to political risk (Desai et al., 2006) while it is also the source of enlarged profit.

For each fiscal year from 2001 through 2004 we divide our total sample into 6 categories based on the magnitude of the value of this ratio, which we label hereafter as $FDS$. In Japan, when the proportion of foreign sales is less than 20%, it is not required to disclose this number even in the note sections of consolidated financial statements. Thus, the firms with zero or less than 20% of this ratio are separately classified as one group and denoted as $FDS0$. The firms with these values larger than 20% are further divided into quintiles. The firms with the highest quintile are denoted, for example, as $FDS5$, the next highest as $FDS4$, and so forth.

Another variable of our interest, the available-for-sale securities to equity ratio
denoted as $WSEC$ hereafter, is defined as the ratio of the amount of available-for-sale securities, reported at fair value to the stockholders’ equity after subtracting the amount of the available-for-sale securities. This ratio can purportedly reveal the informational role of the importance of unrealized gains and losses on securities available-for-sale variable in firms’ operations. Again, for all fiscal years from 2001 through 2004 we divide the sample into five groups based on the magnitudes of the value of this ratio, which we label $WSEC$. The lowest quintile firms are classified as $WSEC1$, the second lowest quintile firms are classified as $WSEC2$, and so forth.

With the above classification schemes we try to resolve the aforementioned negative sign phenomenon of the foreign currency translation adjustment variable and the ratio of available-for-sale securities to equity variable. We apply incremental information content tests to each subgroup of $FDS0$ to $FDS5$ and to the subgroups of $WSEC1$ to $WSEC5$. Table 5 reports the summary results only for the $FDS0$ group, $FDS5$ group, $WSEC1$ group, and $WSEC5$ group, respectively.

Table 5 about here

We find that, from the upper panel of Table 5, the estimated regression coefficient for $\triangle FCT$, for the $FDS0$ group, the most domestic firms, is strongly negative at -8.951 even though it is not significant ($p$-value 0.208), as can be seen in the utmost right column as $p$-value 0.806. For this group the information on the foreign currency translation adjustments does not seem to matter much and the sign conditions are the same with our overall sample result. On the other hand, the regression coefficient for $\triangle FCT$, for the $FDS5$ group, the group of the most foreign oriented firms, is
significantly positive at 3.746 (p-value 0.012). It is a new finding and we have successfully solved one case of the apparent puzzle of the negative coefficients for foreign currency translation adjustments by utilizing such a sub-categorizing procedure based on the proportions of foreign sales variables. Thus, we conclude that only for the subset of the firms with the highest degree of foreign dependency, the unanticipated increase in foreign currency translation adjustments is regarded as good news in the stock market, and in this case that the information possesses incremental information content.

Next, we compare WSEC1 and WSEC5 as classified by the magnitudes of the ratio of available-for-sale securities to equity. Although there does not exist any previous study which has found negative signs for this variable, we try to investigate this negative sign phenomenon from the viewpoint of cross-share holdings known to be prevalent among Japanese firms and to characterize the governance structure of Japanese companies.

In the lower panel of Table 5 we find that the estimated regression coefficient for

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23 Although we do not report it here, coefficients became positive only for this subgroup. The results are available upon request from the authors. Note that both Louis (2003) and Pinto (2005) used samples of U.S. multinationals and reached conflicting conclusions. The structure of multinationals might be different between U.S. firms and Japanese firms. It is also observed that the majority of largest multinational firms in the world are European firms as is pointed out by Doupnik and Perera (2007). The characteristics of Japanese multinationals firms are, according to the observation by the current authors, in importing raw materials, manufacturing parts or product abroad, and selling goods and services to both foreign countries and Japan. Hence, it can be pointed out that foreign subsidiaries of Japanese multinationals are conducting both on the demand side and the supply side of the business operations.

24 The observations of the cross-share holding phenomenon among Japanese firms are not new (McDonald, 1989), and as a result McDonald argues that the P/E ratios tend to be inflated. Because, we use return data we are free from this bias. More importantly, recently the interpretations of the economic consequences of cross-share holding are mixed. Using Japanese data in the 1980s Lichtenberg and Pusher (1994) claim that high levels of inter-corporate shareholding hinder firms’ performance and insulate them from their own problems leading to moral hazard problems. However, they also argue that the equity holding by financial institutions can induce stronger monitoring and promote productivity. Chung et al. (2004) also recently find that for the cross-held firms the degree of value relevance is lower and infer that cross business holdings aggravates tunneling or managerial opportunism through discretionary accounting choices.
\( SEC \), for \( WSEC1 \), the group of firms with the smallest ratios, is significantly positive at 10.291 \((p\text{-value at 0.040})\), and the coefficient for \( \Delta SEC \), for \( WSEC5 \), the group of firms with the largest ratios, is negative at -0.492, but not significant \((p\text{-value at 0.386})\). This result suggests that the information on the unrealized gains and losses on securities available-for-sale is regarded as either good or bad news in the stock market, depending on magnitudes of the ratio of the available-for-sale securities to equity. Because stocks classified as securities available-for-sale items are generally held for the purpose of the firms’ capital alignment and also for the purpose of cross-shareholdings among Japanese firms, we hypothesize that the firms with higher ratios of available-for-sale securities to equity are subject to inefficient capital use. In particular, firms with the highest available-for-sale securities to equity ratio are considered to be the firms which are under severe capital alignment problems, most typically in close connections with financial institutions, and they may also face difficulties in selling those stocks even if they want to do so.

As to shareholdings among Japanese firms, Ang and Constand (2002) classify three types of investors in Japan. The first type is the government or its agencies, the second type, strongly supportive shareholders, and the third type is unrelated investor groups. Our sample with the higher degree of available-for-sale securities to equity ratio would fit to this second type. Accordingly, we claim that the main reason why the regression coefficient for \( \Delta SEC \), of the \( WSEC5 \) group becomes negative can be interpreted as evidence that investors interpret the unanticipated increase in the value of available-for-sale securities as bad news. This can happen when firms are forced to cross-hold securities against their will, and thus investors also judge these firms as under the inefficient use of the capital.
Although we do not report in a separate table, from the result of the incremental information content test full equation, we report that for smaller firms \((LnMV1)\) with high ratios of available-for-sale securities to equity \((WSEC3)\) the coefficient for available-for-sale securities to equity \((SEC)\) is negative at -2.322, significant with \(p\)-value of 0.013, while for larger firms with low ratios, the coefficient is positive at 0.378 with a \(p\)-value of 0.612. Hence, we find that the adverse effect of being forced to hold stock is more severe for smaller sized firms. However, we further conjecture that, if these firms were protected as complete subsidiaries by their parent firms, the story might be different. For this purpose, we again report the regression coefficients of the full equation from the incremental information content test, for which the sample is classified into firms with and without parent firms.\(^{25}\) For firms with parent firms it is -1.547 with a \(p\)-value of 0.643. Even though it is still negative, it is not significant. On the other hand, for firms without parent firms the coefficient is -1.258 with a \(p\)-value at 0.011. So, for firms without parent firms, the unrealized gain is a bad signal. We claim that the recognized gains and losses of securities available-for-sale which are mainly held by protecting parent firms is neither good nor bad news, while in case of loosely cross-held business associate groups it is bad news. We conclude that the negative sign of changes in available-for-sale securities is not a puzzle, and indeed, the evidence of bad corporate governance for smaller firms and firms who are forced to cross-hold shares, while not protected by their parent firms.

Overall, we claim that these bad signals for these two items of the other comprehensive income ought to be disclosed for the benefit of investors as we

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\(^{25}\) Note that the Japanese consolidation standard is the same above 50 per cent criteria for subsidiaries along with the rest of the world.
discussed in previous Section 2.1.26

5. 2. Further Analysis into Industries

In this final subsection we further split our sample into each industry based on 33 official classifications by the Tokyo Stock Exchange and test the robustness and stability of our estimated coefficients. In an initial stage of this inquiry, we found that for the cases in which the total firm-years are less than 100, both coefficients and statistics vary drastically across industries and some of the results become dramatically different from the overall sample result.27 Hence, we decide to report only the industry-wise result for the four industries in which the total firm-years are more than 350.28 We also exclude financial firms as mentioned before.

Table 6 about here

Table 6 reports the result of the relative information content test for fifteen industries, in which the number of observations exceeds 100. We only report the cases where each of two other comprehensive income items is incrementally added to the net income number.29 The first column reports the number of observations, the second column, the foreign dependency rate, the third column, the weight of the securities-for-sale, then the adjusted $R$-square values and the Wald statistics and the corresponding $p$-values, respectively.

We find that for these industries, neither the addition of the changes in cumulative

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26 See footnote 9.
27 Biddle et al. (1995) also show their results for the U.S. vary from industry to industry especially for industries with smaller number of observations.
28 The detailed results on all industries are available upon request from the authors.
29 The complete industry-wise results are again available upon request from the authors.
foreign currency translation adjustments, nor the addition of the changes in the balance of the unrealized gains and losses on securities available-for-sale can significantly increase the incremental information content as far as we judge from the $p$-values from the Wald test. With these industry-wise results, thus we conclude that net income, instead of comprehensive income, may be the number to be reported for those representative industries in Japan.

However, as we discussed in the previous sub-section along with Table 5, for the subset of firms with the highest foreign dependency rate, the changes in cumulative foreign currency translation adjustments possess the significant incremental information content at the 5% significance level. Hence, for some firms, we infer that it will be worthwhile to disclose comprehensive income information, using the changes in cumulative foreign currency translation adjustment.

Note in Table 6 that Electric Appliances, Transportation Equipment, and Machinery show the highest proportions of foreign sales, and Wholesale Trade, Textile and Apparels, Construction, and Transportation Equipment show the highest ratios of the share held by these firms in the table. In Table 7 and Table 8 we find that there exist some systematic patterns of signs and magnitude of regression coefficients are associated with the magnitude of these two variables.

Table 7 about here
Table 8 about here

In Table 7 we find that the higher proportion of foreign sales is associated with higher positive coefficients of contemporaneous changes in foreign currency
translation adjustment. On the other hand, in Table 8 we find that the higher ratio of the share held is associated with the higher absolute value of the negative coefficients of the changes in unrealized gains and losses for securities available-for-sale. These confirm our aforementioned points discussed in the previous sub-section.

Moreover, in Table 7 and 8 we also report the result of the incremental information test of the changes in cumulative foreign currency translation adjustment and the changes in the balance of unrealized gains and losses on securities available-for-sale in the upper most right hand three columns. We report only the regression coefficients of these items along with one lag, when the full equation (3) is estimated, and then the $F$-values whenever this particular variable of interest is dropped from this full equation are reported in the second utmost column.

In Table 7 we find that the $p$-values for the incremental test are not significant for all the cases except Machinery at the 5% significance level at 0.026. Also, all the coefficients with and without lag are not significant at the 5% level. We find that, for 10 out of 15 industries, the contemporary coefficients for the changes in cumulative foreign currency translation adjustment are positive. The evidence augments the earlier overall result in Table 4 where the incremental information content of this variable was weakly significant with the $p$-value 0.057 when dropped from the full equation. Thus, the evidence supports the view that disclosing the changes in cumulative foreign currency translation adjustment will be useful for some industries in the sense of incremental information.

In Table 8 we find that the $p$-values for the incremental test are not significant for all cases except Land Transportation, at a 10% significance level at 0.097. Almost all the coefficients with and without lag are not significant at the 5% level except Land
Transportation at the $p$-value of 0.033. Also, for Machinery the coefficient is significant at the 10% level with the $p$-value of 0.053. We find that, for 9 out of 15 industries, contemporary coefficients for the changes in cumulative foreign currency translation adjustment are negative. In Table 4 we found that the overall incremental information content of this variable is significant at a $p$-value of 0.026 as found in the upper most right hand side column in the third row from the top; stronger than the case for the changes in cumulative foreign currency translation adjustments at a $p$-value 0.057 above.

But, recall contemporary coefficients were negative and significant at a $p$-value of 0.008 for a full equation case again as shown in the top row of Table 4. Thus, even though the coefficients are not significant, the evidence supports the view that cross-share holdings hurt Japanese firms. If it were indeed a bad signal, as we claimed in the previous subsection, the information ought to be disclosed for the sake of investors, preferably as a separate disclosed item.

Thus, in these two sub-sections we have shown the following. First, we show that whether investors interpret other comprehensive income as good or bad news depends on the degree of foreign dependency variables and the ratio of available-for-sale securities to equity variable in our sample. Second, we conclude that both the changes in currency translation adjustments and comprehensive income should be disclosed, because it conveys important information for the subset of firms even if they are not overall significant.

In conclusion, we claim that the disclosure of net income and the separate disclosure of other comprehensive income items can increase information content and thus the expected utility of individual equity investors in view of the fact that these items are
already disclosed as dirty surplus items and the extra cost of producing this information is minimal. We also note that in the SFAC No. 5 the clean surplus representation is generally more favored than the dirty surplus disclosure in the sense that important losses or gains information from income statements are not omitted and justifiable report of performance and stewardship is presented. Hence, whenever the disclosure of comprehensive income becomes imperative in Japan as one of the efforts of convergence to the International Accounting Standards, our finding should serve as evidence that other comprehensive income and net income information help equity investors predict future stock abnormal returns.

6. Conclusion

This is the first study in the field which has investigated information content of comprehensive income and other comprehensive income for Japanese firms, using both relative information content tests with Wald statistics and incremental information content tests with the analysis of variance $F$-test. We have chosen to test net income numbers as a basic benchmark because the objectives of Japanese GAAP are to construct meaningful and reliable net income numbers. Our evidence adds evidence to the international empirical accounting research field.

The paper explores information content of other comprehensive income items currently disclosed in balance sheets as dirty-surplus items in Japan. We choose changes in foreign currency translation adjustments and changes in unrealized gains and losses from securities available-for-sale as items of other comprehensive income. We also construct the “pseudo” comprehensive income from these items.

First, the evidence shows that net income plus changes in currency translation
adjustments have the largest information content. Second, we compare the information content of net income with that of comprehensive income and find that net income possesses superior relative and incremental information content to comprehensive income. Third, we observe that this other comprehensive income possesses significant incremental information content. Fourth, we find that stock market reactions to information of other comprehensive income items depend on the degree of firms’ foreign dependency and the ratio of available-for-sale securities to equity. Also, the pattern is somewhat asymmetrical in the sense that for highly export oriented firms the unrealized gain is good news while for highly cross-held share firms it is bad news. Fifth, we point out that there is a difference in the nature of information content among different industries and we show evidence that the separate disclosure of other comprehensive income may help investors make better investment decisions.

In spite of different disclosure rules for comprehensive income reporting between Japan and the U.S., our findings provide evidence for the robustness of the existence of information content of net income numbers as well as usefulness of other comprehensive income items in terms of predicting abnormal stock returns.

Overall, based on the results from both the relative information content test and the incremental information content test, we recommend the disclosure of net income numbers as well as selected items of other comprehensive income, in case comprehensive income is required to be reported in Japan in the near future, because the additional cost of producing these items will be minimal due to current disclosure practice in balance sheets as dirty surplus items. As SFAC No. 5 (FASB, 1984, par. 35) states, we note clean surplus representation is more favored than the dirty surplus in the sense of not omitting losses or gains from an income statement and present
justifiable report of performance and stewardship.

As a final caveat, however, we do not conclude whether our result demonstrates evidence for or against disclosing comprehensive income. First, because comprehensive income we have constructed for our research is nothing but an artifact number which we call “pseudo” comprehensive income which investors have never observed in real world settings (Ijiri, 1975, Ch. 4). Second, the value relevance findings pinpoint the association between abnormal stock returns and income numbers, but the evidence may not directly lead us to any normative statement about standard settings as Gonedes and Dopuch (1974) and Holthausen and Watts (2001) rightly claim. These are the limitations of our research and further study is strongly called for if the comprehensive income disclosure rule is ever enacted in Japan.
Appendix: Wald Statistics for Relative Information Content Test.

Based on Biddle et al. (1995, equation 13) we compute the following statistics and test a null hypothesis of no difference of the relative information content between the subset of predictable variables $X_1$ and $X_2$ formed from the original matrix $X$. The matrices $Z_1$ and $Z_2$ are as defined in Biddle et al. (1995, p. 9) and $Z_1$ are the columns of $X$ not in and $X_1$ and $Z_2$ are the columns of $X$ not in $X_2$, respectively. In the following equations $y$ is the vector of the dependent variable and $\beta$ is the vector of parameters to be estimated.

$$\beta = (X'X)^{-1}X'y, \quad \varepsilon = y - X\beta$$

$$Q_1 = Z_1'(I - X_1(X_1'X_1)^{-1}X_1')Z_1$$

$$Q_2 = Z_2'(I - X_2(X_2'X_2)^{-1}X_2')Z_2$$

$$Q = \begin{pmatrix} 0 & 0 & 0 \\ 0 & Q_2 & 0 \\ 0 & 0 & -Q_1 \end{pmatrix}$$

$$\beta = \begin{pmatrix} \beta_1 \\ \beta_{N_2} \\ \beta_{N_1} \end{pmatrix} \Rightarrow g = \beta_{N_2}Q_1\beta_{N_2} - \beta_{N_2}Q_2\beta_{N_2}$$

Constraint:  

$$g(\beta) = \beta'Q'\beta$$

Partial derivatives:  

$$\frac{\partial g}{\partial \beta} = G = 2Q\beta$$

Cramer - Rao Lower bound with White(1980) correction:  

$$C = (X'X)^{-1}X'\text{Diag}(\varepsilon)^2X(X'X)^{-1}$$

$$F = (\beta'QCQ\beta)^{-1}$$

Wald = $g'(G'CG)^{-1}g$

$$= g'((2Q\beta)'C(2Q\beta))^{-1}g$$

$$= \frac{1}{4}g'(\beta'QCQ\beta)^{-1}g$$

$$= \frac{1}{4}(g'Fg)$$
References:


Concepts No. 5: Recognition and Measurement in Financial Statements of Business Enterprise, FASB: Stamford, CT.


Table 1. Descriptive Statistics

Our sample is firms listed in the first and second section of the Tokyo Stock Exchange. The observation period is from the 2000 to 2005 fiscal years because the required consolidated financial statement disclosure started in 1999. The total observation is 4,994 based on the imposed condition that at least one item of the other comprehensive income is reported in their financial statements. The pooled results are presented. The accounting variables used are as follows; NI: Net income, ΔSEC: Changes in unrealized gains and losses for securities available-for-sale, ΔFCT: Changes in foreign currency translation adjustments, CI: Comprehensive income (CI=NI+ΔSEC+ΔFCT), OTH: Other comprehensive income (OTH=ΔSEC+ΔFCT). All variables are denominated by total assets at the beginning of the current fiscal year. The abnormal return variable is the following; CAR: Annualized Jensen’s alpha computed from unconditional Fama and French three factor model. In Panel A, lower left off-diagonal elements are Pearson correlation numbers and the upper right off-diagonal elements denote corresponding p-values. In Panel B all accounting numbers reported are the ratios, where the original accounting numbers are divided by the beginning of the period value of the total assets. The abnormal return, CAR, is annualized from the original monthly return data and is in percent.

Panel A. Pearson Correlation Numbers between Net Income and Other Comprehensive Income Items with corresponding p-values.

<table>
<thead>
<tr>
<th></th>
<th>NI</th>
<th>CI</th>
<th>OTH</th>
<th>ΔSEC</th>
<th>ΔFCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>0.000</td>
<td>0.628</td>
<td>0.134</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>CI</td>
<td>0.967</td>
<td>0.000</td>
<td>0.000</td>
<td>0.181</td>
<td></td>
</tr>
<tr>
<td>OTH</td>
<td>-0.007</td>
<td>0.247</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>ΔSEC</td>
<td>0.021</td>
<td>0.255</td>
<td>0.921</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>ΔFCT</td>
<td>-0.069</td>
<td>0.019</td>
<td>0.337</td>
<td>-0.056</td>
<td></td>
</tr>
</tbody>
</table>

Panel B. Basic Statistics and Percentiles of the Relevant Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>5%ile</th>
<th>1st. Qu.</th>
<th>Median</th>
<th>3rd Qu.</th>
<th>95%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td>1.376</td>
<td>5.765</td>
<td>-5.507</td>
<td>0.399</td>
<td>1.618</td>
<td>3.306</td>
<td>7.295</td>
</tr>
<tr>
<td>CI</td>
<td>1.590</td>
<td>5.950</td>
<td>-5.483</td>
<td>0.187</td>
<td>1.876</td>
<td>3.901</td>
<td>8.101</td>
</tr>
<tr>
<td>OTH</td>
<td>0.214</td>
<td>1.511</td>
<td>-1.499</td>
<td>-0.241</td>
<td>0.076</td>
<td>0.561</td>
<td>2.348</td>
</tr>
<tr>
<td>ΔSEC</td>
<td>0.260</td>
<td>1.425</td>
<td>-1.165</td>
<td>-0.147</td>
<td>0.057</td>
<td>0.489</td>
<td>2.320</td>
</tr>
<tr>
<td>ΔFCT</td>
<td>-0.047</td>
<td>0.590</td>
<td>-0.865</td>
<td>-0.098</td>
<td>0.000</td>
<td>0.019</td>
<td>0.707</td>
</tr>
<tr>
<td>CAR</td>
<td>1.091</td>
<td>36.749</td>
<td>-53.205</td>
<td>-18.574</td>
<td>-0.148</td>
<td>18.820</td>
<td>59.298</td>
</tr>
</tbody>
</table>
Table 2. Relative Information Content Regression Results

The sample is the same as in Table 1 as well as the definition of the variables; that is, \( NI \): Net income, \( \triangle SEC \): Changes in unrealized gains and losses for securities available-for-sale, \( \triangle FCT \): Changes in foreign currency translation adjustments, \( CI \): Comprehensive income \((CI=NI+\triangle SEC+\triangle FCT)\), \( OTH \): Other comprehensive income \((OTH=\triangle SEC+\triangle FCT)\). The regression equations used are equation (4) in the main text and, for example, the caption \( CI \) in the utmost left hand column, means that \( CI=NI+\triangle SEC+\triangle FCT \) is used as an explanatory variable with lag. Other cases are when the independent variables are changed as the captions indicates. In the table from left to right columns, we report alpha estimate, \( p \)-value, the contemporaneous regression coefficient, \( p \)-value, the lagged regression coefficient, \( p \)-value, and adjusted \( R^2 \) square values.

<table>
<thead>
<tr>
<th></th>
<th>Alpha</th>
<th>( p )-value</th>
<th>( X_t )</th>
<th>( p )-value</th>
<th>( X_{t-1} )</th>
<th>( p )-value</th>
<th>Adjusted ( R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( NI + \triangle FCT )</td>
<td>-0.119</td>
<td>0.833</td>
<td>1.487</td>
<td>0.000</td>
<td>-0.719</td>
<td>0.000</td>
<td>0.023</td>
</tr>
<tr>
<td>( NI )</td>
<td>-0.064</td>
<td>0.910</td>
<td>1.453</td>
<td>0.000</td>
<td>-0.666</td>
<td>0.000</td>
<td>0.022</td>
</tr>
<tr>
<td>( CI )</td>
<td>-0.046</td>
<td>0.937</td>
<td>1.187</td>
<td>0.000</td>
<td>-0.471</td>
<td>0.001</td>
<td>0.017</td>
</tr>
<tr>
<td>( NI + \triangle SEC )</td>
<td>-0.031</td>
<td>0.958</td>
<td>1.148</td>
<td>0.000</td>
<td>-0.414</td>
<td>0.003</td>
<td>0.016</td>
</tr>
<tr>
<td>( \triangle FCT )</td>
<td>0.998</td>
<td>0.075</td>
<td>-0.641</td>
<td>0.576</td>
<td>-1.510</td>
<td>0.062</td>
<td>0.002</td>
</tr>
<tr>
<td>( \triangle SEC + \triangle FCT )</td>
<td>1.529</td>
<td>0.066</td>
<td>-0.805</td>
<td>0.089</td>
<td>-0.368</td>
<td>0.338</td>
<td>0.002</td>
</tr>
<tr>
<td>( \triangle SEC )</td>
<td>1.472</td>
<td>0.012</td>
<td>-0.731</td>
<td>0.142</td>
<td>-0.032</td>
<td>0.937</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table 3. Wald Statistics for the Relative Information Content Test

The sample is the same as in Table 1. The definition of the variable is the same as in Table 2. The reported numbers in the lower triangular matrix are Wald test statistics based on regressions which are reported in Table 2. In the upper triangular matrix the corresponding \( p \)-values are reported. We report in descending order adjusted R-square values as presented in Table 2. For example, it shows that \( NI + \triangle FCT \) is the best model in terms of \( R \) square values and Wald statistics relative to the next best model, \( NI \) is 1.046, and the \( p \)-value is 0.306, which is not significant.

<table>
<thead>
<tr>
<th></th>
<th>( NI + \triangle FCT )</th>
<th>( NI )</th>
<th>( CI )</th>
<th>( NI + \triangle SEC )</th>
<th>( \triangle FCT )</th>
<th>( \triangle SEC + \triangle FCT )</th>
<th>( \triangle SEC )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( NI + \triangle FCT )</td>
<td>0.306</td>
<td>0.003</td>
<td>0.002</td>
<td>0.001</td>
<td>0.002</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>( NI )</td>
<td>1.046</td>
<td>0.016</td>
<td>0.004</td>
<td>0.002</td>
<td>0.002</td>
<td>0.002</td>
<td>0.002</td>
</tr>
<tr>
<td>( CI )</td>
<td>8.615</td>
<td>5.750</td>
<td>0.242</td>
<td>0.006</td>
<td>0.007</td>
<td>0.007</td>
<td>0.008</td>
</tr>
<tr>
<td>( NI + \triangle SEC )</td>
<td>9.184</td>
<td>8.502</td>
<td>1.366</td>
<td>0.007</td>
<td>0.009</td>
<td>0.009</td>
<td>0.009</td>
</tr>
<tr>
<td>( \triangle FCT )</td>
<td>10.327</td>
<td>9.651</td>
<td>7.656</td>
<td>7.190</td>
<td>0.929</td>
<td>0.817</td>
<td></td>
</tr>
<tr>
<td>( \triangle SEC + \triangle FCT )</td>
<td>10.067</td>
<td>9.613</td>
<td>7.170</td>
<td>6.884</td>
<td>0.008</td>
<td>0.731</td>
<td></td>
</tr>
<tr>
<td>( \triangle SEC )</td>
<td>10.169</td>
<td>9.680</td>
<td>7.149</td>
<td>6.830</td>
<td>0.054</td>
<td>0.118</td>
<td></td>
</tr>
</tbody>
</table>
Table 4. Analysis of Variance Test Results from the Incremental Information Test

The definition of the sample is the same as in Table 1. NI: Net income, △SEC: Changes in unrealized gains and losses for securities available-for-sale, △FCT: Changes in foreign currency translation adjustments, CI: Comprehensive income (CI=NI+△SEC+△FCT), OTH: Other comprehensive income (OTH=△SEC+△FCT). The regression models are equation (3) in the main text. The reported are the estimated regression coefficients for the full equations, the case when either or both FCT and SEC are dropped and when net Income per se is dropped. Adjusted R-squares are reported in the second most right hand columns and Wald statistics and the corresponding p-values are reported in the most right hand column.

<table>
<thead>
<tr>
<th></th>
<th>Intercept</th>
<th>NI</th>
<th>NI \textsuperscript{-1}</th>
<th>△SEC</th>
<th>△SEC \textsuperscript{-1}</th>
<th>△FCT</th>
<th>△FCT \textsuperscript{-1}</th>
<th>Adjusted $R^2$</th>
<th>F-value, p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coef.</td>
<td>0.233</td>
<td>1.518</td>
<td>-0.729</td>
<td>-1.320</td>
<td>-0.589</td>
<td>0.835</td>
<td>-1.633</td>
<td>0.023</td>
<td></td>
</tr>
<tr>
<td>p-val.</td>
<td>0.705</td>
<td>0.000</td>
<td>0.000</td>
<td>0.008</td>
<td>0.158</td>
<td>0.473</td>
<td>0.045</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coef.</td>
<td>0.365</td>
<td>1.490</td>
<td>-0.686</td>
<td>-1.186</td>
<td>-0.412</td>
<td></td>
<td>0.023</td>
<td>2.872</td>
<td>0.057</td>
</tr>
<tr>
<td>p-val.</td>
<td>0.548</td>
<td>1.490</td>
<td>-0.686</td>
<td>-1.186</td>
<td>-0.412</td>
<td></td>
<td>0.023</td>
<td>2.872</td>
<td>0.057</td>
</tr>
<tr>
<td>Coef.</td>
<td>-0.232</td>
<td>1.475</td>
<td>-0.703</td>
<td></td>
<td>0.946</td>
<td>-1.277</td>
<td>0.022</td>
<td>3.634</td>
<td></td>
</tr>
<tr>
<td>p-val.</td>
<td>0.691</td>
<td>1.475</td>
<td>-0.703</td>
<td></td>
<td>0.946</td>
<td>-1.277</td>
<td>0.022</td>
<td>3.634</td>
<td></td>
</tr>
<tr>
<td>Coef.</td>
<td>-0.064</td>
<td>1.453</td>
<td>-0.666</td>
<td></td>
<td>0.409</td>
<td>0.112</td>
<td>0.023</td>
<td>2.884</td>
<td></td>
</tr>
<tr>
<td>p-val.</td>
<td>0.910</td>
<td>1.453</td>
<td>-0.666</td>
<td></td>
<td>0.409</td>
<td>0.112</td>
<td>0.023</td>
<td>2.884</td>
<td></td>
</tr>
<tr>
<td>Coef.</td>
<td>1.227</td>
<td>1.475</td>
<td>-0.897</td>
<td>-0.118</td>
<td>-0.871</td>
<td>-1.718</td>
<td>0.002</td>
<td>48.121</td>
<td></td>
</tr>
<tr>
<td>p-val.</td>
<td>0.041</td>
<td>1.227</td>
<td>-0.897</td>
<td>-0.118</td>
<td>-0.871</td>
<td>-1.718</td>
<td>0.002</td>
<td>48.121</td>
<td></td>
</tr>
<tr>
<td>Coef.</td>
<td>1.472</td>
<td>1.472</td>
<td>-0.731</td>
<td>-0.032</td>
<td>0.453</td>
<td>0.363</td>
<td>0.001</td>
<td>25.188</td>
<td></td>
</tr>
<tr>
<td>p-val.</td>
<td>0.012</td>
<td>1.472</td>
<td>-0.731</td>
<td>-0.032</td>
<td>0.453</td>
<td>0.363</td>
<td>0.001</td>
<td>25.188</td>
<td></td>
</tr>
<tr>
<td>Coef.</td>
<td>0.998</td>
<td>0.998</td>
<td>-0.641</td>
<td>-1.510</td>
<td>0.002</td>
<td>24.894</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-val.</td>
<td>0.075</td>
<td>0.998</td>
<td>-0.641</td>
<td>-1.510</td>
<td>0.002</td>
<td>24.894</td>
<td>0.002</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

40
Table 5. Firm Characteristics and the Incremental Information Content Test

The definition of the sample is the same as in Table 1. Other new definitions are the following. **FDS**: Proportion of foreign sales, **WSEC**: Ratio of Securities to equity, **NI**: Net income, **⊿SEC**: Changes in unrealized gains and losses for securities available-for-sale, **⊿FCT**: Changes in foreign currency translation adjustments. The reported are estimated regression coefficients for full equations and cases when **FCT** is dropped (upper panels) and **SEC** is dropped (lower panels).

<table>
<thead>
<tr>
<th></th>
<th>Intercept</th>
<th>NI&lt;sub&gt;t&lt;/sub&gt;</th>
<th>NI&lt;sub&gt;t-1&lt;/sub&gt;</th>
<th>△SEC&lt;sub&gt;t&lt;/sub&gt;</th>
<th>△SEC&lt;sub&gt;t-1&lt;/sub&gt;</th>
<th>△FCT&lt;sub&gt;t&lt;/sub&gt;</th>
<th>△FCT&lt;sub&gt;t-1&lt;/sub&gt;</th>
<th>Adjusted R²</th>
<th>F-value, p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FDS 0</strong> (Proportion of foreign sales is zero or less than 20%)</td>
<td>Coef. -4.169</td>
<td>1.599</td>
<td>-0.926</td>
<td>-1.837</td>
<td>0.632</td>
<td>-8.951</td>
<td>0.076</td>
<td>0.034</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-val. 0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.036</td>
<td>0.411</td>
<td>0.208</td>
<td>0.987</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coef. -4.116</td>
<td>1.626</td>
<td>-0.949</td>
<td>-1.800</td>
<td>0.587</td>
<td>0.034</td>
<td>0.806</td>
<td>0.447</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-val. 0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.040</td>
<td>0.444</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FDS 5</strong> (High Proportion of Foreign Sales Category)</td>
<td>Coef. 9.722</td>
<td>0.714</td>
<td>-0.054</td>
<td>3.460</td>
<td>-1.284</td>
<td>3.746</td>
<td>0.907</td>
<td>0.088</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-val. 0.000</td>
<td>0.085</td>
<td>0.897</td>
<td>0.154</td>
<td>0.528</td>
<td>0.012</td>
<td>0.408</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coef. 8.915</td>
<td>0.457</td>
<td>0.108</td>
<td>2.368</td>
<td>-0.470</td>
<td>0.080</td>
<td>3.231</td>
<td>0.040</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-val. 0.000</td>
<td>0.251</td>
<td>0.789</td>
<td>0.312</td>
<td>0.808</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WSEC 1</strong> (Low Ratio of Securities to Equity Category)</td>
<td>Coef. 1.496</td>
<td>0.837</td>
<td>-0.434</td>
<td>10.291</td>
<td>1.490</td>
<td>2.298</td>
<td>-1.601</td>
<td>0.021</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-val. 0.304</td>
<td>0.001</td>
<td>0.160</td>
<td>0.040</td>
<td>0.733</td>
<td>0.287</td>
<td>0.374</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coef. 1.662</td>
<td>0.895</td>
<td>-0.418</td>
<td>1.673</td>
<td>-2.143</td>
<td>0.018</td>
<td>2.166</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-val. 0.247</td>
<td>0.000</td>
<td>0.176</td>
<td>0.434</td>
<td>0.228</td>
<td>0.115</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WSEC 5</strong> (High Ratio of Securities to Equity Category)</td>
<td>Coef. -4.211</td>
<td>1.975</td>
<td>-0.244</td>
<td>-0.492</td>
<td>-0.025</td>
<td>-6.316</td>
<td>-0.554</td>
<td>0.044</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-val. 0.002</td>
<td>0.000</td>
<td>0.514</td>
<td>0.386</td>
<td>0.960</td>
<td>0.064</td>
<td>0.798</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coef. -4.435</td>
<td>1.946</td>
<td>-0.221</td>
<td>-6.055</td>
<td>-0.280</td>
<td>0.045</td>
<td>0.430</td>
<td>0.651</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-val. 0.001</td>
<td>0.000</td>
<td>0.554</td>
<td>0.069</td>
<td>0.895</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6. Industry-wise Result of Relative Information Content Test: Securities Available-for-Sale

The definition of the sample is the same as in Table 1. Other new definitions are the following. \( FDS \): Proportion of foreign sales, \( WSEC \): Ratio of Securities to equity, \( NI \): Net income, \( \triangle SEC \): Changes in unrealized gains and losses for securities available-for-sale, \( \triangle FCT \): Changes in foreign currency translation adjustments. Industry classifications are based on the Tokyo Stock Exchange 33 classifications. We exclude the sample with the observation less than 100 and financial firms. \( NOB \) is the number of observations, \( FDS \) is the ratio of \( FDS \), \( WSEC \) is the ratio of \( WSEC \). The fourth column is adjusted \( R \)-squares of net income and adjacent columns to the right are cases when either \( FCT \) or \( SEC \) is individually added to net income and adjusted \( R \)-squares, Wald statistics and the corresponding \( p \)-values are reported, respectively.

<table>
<thead>
<tr>
<th>NOBS</th>
<th>FDS</th>
<th>WSEC</th>
<th>Adjusted N( I^2 )</th>
<th>Adjusted N( I^2 + \triangle FCT )</th>
<th>Wald vs. N( I^2 )(p-value)</th>
<th>Adjusted N( I^2 + \triangle SEC )</th>
<th>Wald vs. N( I^2 + \triangle SEC )(p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>345</td>
<td>4.166</td>
<td>23.965</td>
<td>0.135</td>
<td>0.134</td>
<td>0.186</td>
<td>0.667</td>
</tr>
<tr>
<td>Foods</td>
<td>184</td>
<td>3.438</td>
<td>21.338</td>
<td>0.116</td>
<td>0.116</td>
<td>0.001</td>
<td>0.980</td>
</tr>
<tr>
<td>Textiles&amp;Apparels</td>
<td>145</td>
<td>14.156</td>
<td>25.281</td>
<td>0.045</td>
<td>0.050</td>
<td>1.191</td>
<td>0.275</td>
</tr>
<tr>
<td>Chemicals</td>
<td>365</td>
<td>20.176</td>
<td>16.283</td>
<td>0.045</td>
<td>0.051</td>
<td>1.251</td>
<td>0.263</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>118</td>
<td>11.778</td>
<td>17.240</td>
<td>0.114</td>
<td>0.074</td>
<td>2.280</td>
<td>0.131</td>
</tr>
<tr>
<td>Iron&amp;Steel</td>
<td>117</td>
<td>15.207</td>
<td>14.435</td>
<td>0.008</td>
<td>0.010</td>
<td>0.287</td>
<td>0.592</td>
</tr>
<tr>
<td>Metal Products</td>
<td>105</td>
<td>7.157</td>
<td>11.975</td>
<td>0.150</td>
<td>0.149</td>
<td>0.002</td>
<td>0.964</td>
</tr>
<tr>
<td>Machinery</td>
<td>376</td>
<td>29.977</td>
<td>20.641</td>
<td>0.023</td>
<td>0.024</td>
<td>0.082</td>
<td>0.775</td>
</tr>
<tr>
<td>Electric Appliances</td>
<td>505</td>
<td>37.378</td>
<td>14.604</td>
<td>0.096</td>
<td>0.099</td>
<td>0.356</td>
<td>0.551</td>
</tr>
<tr>
<td>Transportation Equipme</td>
<td>212</td>
<td>32.138</td>
<td>23.987</td>
<td>0.116</td>
<td>0.104</td>
<td>0.633</td>
<td>0.426</td>
</tr>
<tr>
<td>Other Products</td>
<td>169</td>
<td>13.193</td>
<td>12.716</td>
<td>0.144</td>
<td>0.143</td>
<td>0.012</td>
<td>0.912</td>
</tr>
<tr>
<td>Land Transportation</td>
<td>133</td>
<td>1.342</td>
<td>21.056</td>
<td>0.058</td>
<td>0.056</td>
<td>0.335</td>
<td>0.563</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>356</td>
<td>11.965</td>
<td>33.970</td>
<td>0.000</td>
<td>-0.002</td>
<td>0.362</td>
<td>0.548</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>127</td>
<td>0.988</td>
<td>12.363</td>
<td>0.071</td>
<td>0.072</td>
<td>0.223</td>
<td>0.637</td>
</tr>
<tr>
<td>Services</td>
<td>240</td>
<td>3.291</td>
<td>13.480</td>
<td>0.048</td>
<td>0.048</td>
<td>0.072</td>
<td>0.788</td>
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</tbody>
</table>
Table 7. Industry-wise Result of Incremental Information Content Test: Foreign Exchange Gains and Losses

The definition of the sample is the same as in Table 1. Other new definitions are the following. FDS: Proportion of foreign sales, WSEC: Ratio of Securities to equity, NI: Net income, ⊿SEC: Changes in unrealized gains and losses for securities available-for-sale, ⊿FCT: Changes in foreign currency translation adjustments. Industry classifications are based on the Tokyo Stock Exchange 33 classifications. We exclude the sample with the observation less than 100 and financial firms. From the third column to the fourth column are shown estimated coefficients and \( p \)-values for the full regression equations and the fifth is adjusted \( R \)-squares. The three columns from the upper most right are the incremental information content test results when \( FCT \) is dropped from the full equation.

<table>
<thead>
<tr>
<th>Industry</th>
<th>NOBS</th>
<th>FDS</th>
<th>Coef. ( FCT_t ) ((p\text{-value}))</th>
<th>Coef. ( FCT_{t-1} ) ((p\text{-value}))</th>
<th>Adjusted ( R^2 ) All Variables</th>
<th>Adjusted ( R^2 ) Dropped ( FCTs )</th>
<th>( F )-value ((p\text{-value}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>345</td>
<td>4.166</td>
<td>-10.525 0.502</td>
<td>24.603 0.065</td>
<td>0.135</td>
<td>0.131</td>
<td>1.828 0.162</td>
</tr>
<tr>
<td>Foods</td>
<td>184</td>
<td>3.438</td>
<td>-2.816 0.491</td>
<td>-4.566 0.149</td>
<td>0.111</td>
<td>0.110</td>
<td>1.129 0.326</td>
</tr>
<tr>
<td>Textiles &amp; Apparels</td>
<td>145</td>
<td>14.156</td>
<td>10.569 0.175</td>
<td>0.412 0.926</td>
<td>0.038</td>
<td>0.038</td>
<td>1.004 0.369</td>
</tr>
<tr>
<td>Chemicals</td>
<td>365</td>
<td>20.176</td>
<td>3.052 0.312</td>
<td>-1.010 0.643</td>
<td>0.041</td>
<td>0.041</td>
<td>1.021 0.361</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>118</td>
<td>11.778</td>
<td>-2.607 0.672</td>
<td>2.338 0.621</td>
<td>0.124</td>
<td>0.134</td>
<td>0.328 0.721</td>
</tr>
<tr>
<td>Iron &amp; Steel</td>
<td>117</td>
<td>15.207</td>
<td>7.669 0.272</td>
<td>-4.757 0.427</td>
<td>0.000</td>
<td>0.002</td>
<td>0.864 0.424</td>
</tr>
<tr>
<td>Metal Products</td>
<td>105</td>
<td>7.157</td>
<td>3.195 0.611</td>
<td>2.360 0.629</td>
<td>0.124</td>
<td>0.138</td>
<td>0.234 0.792</td>
</tr>
<tr>
<td>Machinery</td>
<td>376</td>
<td>29.977</td>
<td>6.046 0.053</td>
<td>-2.600 0.280</td>
<td>0.042</td>
<td>0.028</td>
<td>3.688 0.026</td>
</tr>
<tr>
<td>Electric Appliances</td>
<td>505</td>
<td>37.378</td>
<td>2.534 0.199</td>
<td>1.587 0.306</td>
<td>0.095</td>
<td>0.094</td>
<td>1.186 0.306</td>
</tr>
<tr>
<td>Transportation Equipment</td>
<td>212</td>
<td>32.138</td>
<td>2.065 0.491</td>
<td>1.962 0.395</td>
<td>0.111</td>
<td>0.115</td>
<td>0.528 0.591</td>
</tr>
<tr>
<td>Other Products</td>
<td>169</td>
<td>13.193</td>
<td>-6.183 0.470</td>
<td>-6.167 0.214</td>
<td>0.133</td>
<td>0.135</td>
<td>0.791 0.455</td>
</tr>
<tr>
<td>Land Transportation</td>
<td>133</td>
<td>1.342</td>
<td>24.142 0.199</td>
<td>17.737 0.221</td>
<td>0.091</td>
<td>0.087</td>
<td>1.245 0.291</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>356</td>
<td>11.965</td>
<td>-7.485 0.252</td>
<td>2.177 0.614</td>
<td>-0.004</td>
<td>-0.004</td>
<td>1.092 0.337</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>127</td>
<td>0.988</td>
<td>37.470 0.391</td>
<td>-7.044 0.837</td>
<td>0.052</td>
<td>0.061</td>
<td>0.433 0.649</td>
</tr>
<tr>
<td>Services</td>
<td>240</td>
<td>3.291</td>
<td>8.154 0.286</td>
<td>1.804 0.757</td>
<td>0.050</td>
<td>0.054</td>
<td>0.573 0.565</td>
</tr>
</tbody>
</table>
Table 8. Industry-wise Result of Incremental Information Content Test: Gains and Losses for Securities Available-for-Sale

The definition of the sample is the same as in Table 1. Other new definitions are the following. \textit{FDS}: Proportion of foreign sales, \textit{WSEC}: Ratio of Securities to equity, \textit{NI}: Net income, \(\Delta SEC\): Changes in unrealized gains and losses for securities available-for-sale, \(\Delta FCT\): Changes in foreign currency translation adjustments. Industry classifications are based on the Tokyo Stock Exchange 33 classifications. We exclude the sample with the observation less than 100 and financial firms. From the third column to the fourth column are shown estimated coefficients and \(p\)-values for full regression equations and the fifth is adjusted \(R^2\)-squares. The three columns from the upper most right are the incremental information content test results when \(SEC\) is dropped from the full equation.

<table>
<thead>
<tr>
<th>Industry</th>
<th>NOBS</th>
<th>WSEC</th>
<th>Coef. (SEC_t) ((p\text{-value}))</th>
<th>Coef. (SEC_{t-1}) ((p\text{-value}))</th>
<th>Adjusted (R^2) All Variables</th>
<th>Adjusted (R^2) Dropped SEC</th>
<th>(F)-value ((p\text{-value}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>345</td>
<td>23.965</td>
<td>1.540 (0.464)</td>
<td>1.544 (0.428)</td>
<td>0.135</td>
<td>0.138</td>
<td>0.432 (0.650)</td>
</tr>
<tr>
<td>Foods</td>
<td>184</td>
<td>21.338</td>
<td>0.862 (0.472)</td>
<td>0.398 (0.688)</td>
<td>0.111</td>
<td>0.118</td>
<td>0.268 (0.765)</td>
</tr>
<tr>
<td>Textiles&amp;Apparels</td>
<td>145</td>
<td>25.281</td>
<td>0.407 (0.798)</td>
<td>-1.481 (0.353)</td>
<td>0.038</td>
<td>0.042</td>
<td>0.706 (0.495)</td>
</tr>
<tr>
<td>Chemicals</td>
<td>365</td>
<td>16.283</td>
<td>-0.416 (0.781)</td>
<td>-0.063 (0.958)</td>
<td>0.041</td>
<td>0.046</td>
<td>0.040 (0.961)</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>118</td>
<td>17.240</td>
<td>-1.544 (0.474)</td>
<td>-2.985 (0.101)</td>
<td>0.124</td>
<td>0.118</td>
<td>1.372 (0.258)</td>
</tr>
<tr>
<td>Iron&amp;Steel</td>
<td>117</td>
<td>14.345</td>
<td>-6.347 (0.214)</td>
<td>-0.244 (0.960)</td>
<td>0.000</td>
<td>0.003</td>
<td>0.823 (0.442)</td>
</tr>
<tr>
<td>Metal Products</td>
<td>105</td>
<td>11.975</td>
<td>0.524 (0.827)</td>
<td>-1.715 (0.516)</td>
<td>0.124</td>
<td>0.137</td>
<td>0.284 (0.754)</td>
</tr>
<tr>
<td>Machinery</td>
<td>376</td>
<td>20.641</td>
<td>-2.696 (0.053)</td>
<td>-1.128 (0.352)</td>
<td>0.042</td>
<td>0.037</td>
<td>2.041 (0.131)</td>
</tr>
<tr>
<td>Electric Appliances</td>
<td>505</td>
<td>14.604</td>
<td>0.924 (0.647)</td>
<td>1.298 (0.447)</td>
<td>0.095</td>
<td>0.097</td>
<td>0.314 (0.731)</td>
</tr>
<tr>
<td>Transportation Equipmen</td>
<td>212</td>
<td>23.987</td>
<td>1.491 (0.534)</td>
<td>-1.707 (0.305)</td>
<td>0.111</td>
<td>0.110</td>
<td>1.129 (0.325)</td>
</tr>
<tr>
<td>Other Products</td>
<td>169</td>
<td>12.716</td>
<td>-1.445 (0.750)</td>
<td>2.428 (0.561)</td>
<td>0.133</td>
<td>0.140</td>
<td>0.285 (0.752)</td>
</tr>
<tr>
<td>Land Transportation</td>
<td>133</td>
<td>21.056</td>
<td>-4.637 (0.033)</td>
<td>-1.960 (0.232)</td>
<td>0.091</td>
<td>0.071</td>
<td>2.374 (0.097)</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>356</td>
<td>33.970</td>
<td>-0.860 (0.585)</td>
<td>0.852 (0.546)</td>
<td>-0.004</td>
<td>-0.001</td>
<td>0.540 (0.584)</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>127</td>
<td>12.363</td>
<td>-0.814 (0.898)</td>
<td>-6.005 (0.284)</td>
<td>0.052</td>
<td>0.059</td>
<td>0.593 (0.554)</td>
</tr>
<tr>
<td>Services</td>
<td>240</td>
<td>13.480</td>
<td>-1.360 (0.290)</td>
<td>1.399 (0.246)</td>
<td>0.050</td>
<td>0.046</td>
<td>1.512 (0.223)</td>
</tr>
</tbody>
</table>