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Implications of Comprehensive Income Disclosure For Future Earning and Analysts' Forecasts

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Abstract

This paper examines the association of comprehensive income with subsequent period net income as well as analysts' earnings forecasts. Our results support the notion that comprehensive income is incrementally useful in predicting subsequent period changes in net income. We also document that comprehensive income is associated with analysts' earnings forecast revisions and forecast errors. The evidence is consistent with analysts' failure to fully utilize the information disclosed in comprehensive income. The result suggests that analysts revise their year t+1's forecast downward when comprehensive income is smaller than net income but they do not revise the forecast upward when comprehensive income is greater than net income. This evidence on the asymmetric use of comprehensive income is consistent with the notion that the future recognition of unrecognized

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losses is more predictable than the future recognition of unrecognized gains.

Keywords: comprehensive income, earnings prediction, analysts' forecast revisions, analysts' forecast errors, usefulness of accounting disclosures.

INTRODUCTION

Several prior researchers have examined the usefulness of comprehensive income disclosures as required by Statement of Financial Accounting Standard (SFAS) No. 130 on *Reporting Comprehensive Income*, which became effective for all financial statements reported after December 15, 1997. For example, O'Hanlon and Pope (1999) and Dhaliwal et al. (1999) provide evidence that comprehensive income rarely provides useful information beyond that provided by net income to explain stock returns. In contrast, Hirst and Hopkins (1998), Maines and McDaniel (2000), and Biddle and Choi (2006) provide evidence that comprehensive income is value relevant. Thus, the evidence to date on the usefulness of comprehensive income disclosures remains mixed and inconclusive. Furthermore, the primary focus of most prior research has been on assessing the value-relevance or information content of comprehensive income disclosures. In this paper we depart from prior research by focusing on the predictive ability of comprehensive income disclosures. Specifically, we examine two related questions to assess the predictive ability of comprehensive income. First, we examine the in-sample relation between comprehensive income in a base (current) year and the reported net income in a subsequent fiscal year. Second, we examine whether financial analysts appear to incorporate this information as reflected in their forecast errors and forecast revisions. Taken together, the two approaches are both aimed at assessing whether comprehensive income is useful in predicting future net income.

According to SFAS No. 130, Financial Accounting Standard Board (FASB) defines comprehensive income as "…the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. It includes all changes in equity during a period except for those

resulted from investments by owners and distributions to owners" (FASB concepts statement No.6, par.70). The statement does not specify when to recognize or how to measure items that make up comprehensive income and its components as part of the income statement.[1)] However, it does require that several items that were previously reported as direct adjustments to equity (i.e., as dirty surplus) be reported as adjustments to net income to arrive at comprehensive income. Thus, comprehensive income includes net income and other items resulted from transactions that affect shareholders' equity but are excluded from net income.[2)] The unrecognized items although excluded from net income may be related to the core business activities and hence relevant for investors' decision making (Maines and McDaniel 2000).

Given that managers have discretion in the timing and recognition of the unrecognized gains and losses, they are likely to choose their timing so as to manage their current period earnings. Thus, a firm, which is doing well in a current year, may be more likely to defer unrecognized gains, as it does not need them to boost current year income. On the other hand, a firm that is doing poorly may also defer unrecognized losses, as it may not want to have a further dent on its already poor performance. Hence, if there exist unrecognized gains (losses),[3)] managers may delay the recognition of the unrecognized gains (losses) when the firm is performing better (worse) than markets' expectation. The manager has no need to inflate (deflate) earnings by recognizing previously unrecognized gains (losses) if the firm is performing better (worse) than the expectation.[4)] To this extent, reported comprehensive income represents the underlying economic situation of the firm. However, while unrecognized gains may be deferred indefinitely, managers may

1) Firms may comply with the standard by reporting these items in a statement of changes in equity.
2) These excluded items include, among others, unrealized holding gains/losses on marketable securities, adjustments for pension liability, and foreign currency translation adjustments.
3) Unrecognized gains or losses are items which are not included in the calculation of net income but included in the comprehensive income. Thus, if there exist unrecognized gains (losses), comprehensive income is greater (smaller) than net income.
4) In the extreme, it is possible for a manager to recognize all of the previously unrecognized losses and take a big bath if the firm is in a very poor situation.

find it difficult to indefinitely postpone the recognition of unrecognized losses as there are constraints imposed by tax laws on the carry forward of tax losses. To this extent, the recognition of unrecognized losses in the future may be more predictable than the recognition of unrecognized gains.[5] This suggests that the predictability of future net income would be improved by incorporating information contained in current period comprehensive income disclosures. We therefore examine the association between current period comprehensive income and subsequent period earnings.

We also examine whether financial analysts appear to use information disclosed under SFAS 130. This examination is motivated by the concern over the arbitrary exclusion of certain changes in net assets from the income statement, which later led to SFAS No. 130. Indeed, the Association for Investment Management and Research (AIMR) in a 1993 report argued for the disclosure of an "all-inclusive" or comprehensive income statement that would display all of an entity's changes in wealth for a given period, except for those arising from transactions with owners. In particular, it was noted that while financial statements disclose non-income and non-owner transactions in various parts, *much effort is required of analysts to locate and evaluate all of the (comprehensive) income statement items that have a bearing on their forecasts of the future and the valuation of the firm* (AIMR 1993, p. 88). Thus to the extent the analysts' community themselves argued for such disclosures, it provides a natural motivation for examining whether such disclosures are indeed used in forecasting earnings.

A second motivation is that analysts play an important role as information intermediaries. As Schipper (1991) points out, financial analysts are a group of 'sophisticated' users of financial statements 'to whom financial reporting is and should be addressed.' To the extent analysts act as intermediaries in capital markets, they provide a convenient setting in which to assess the extent to which disclosure of comprehensive income is in fact useful to investors. This is in the spirit Bradshaw et al. (2001) who examine the association of current accruals with

5) Recognition of unrecognized gains and losses is also related to at least one definition of accounting conservatism — one that is based on the asymmetric timing in the recognition of unrecognized gains and losses (Basu 1997).

analysts' earnings forecast error of future earnings, and Chen, Danielson, and Schoderbeck (2003) who examine forecast revisions after disclosure of the 1993 deferred tax adjustment. Moreover, several research papers have examined the use of non-operating items and how they affect analysts' earnings forecasts.[6] In the context of comprehensive income, clearly the recognition of some components, such as minimum pension liability adjustments and security holding gains/losses do affect current and/or future operating income. However, no prior study has examined whether analysts' earnings forecasts appear to use those information disclosed in comprehensive income. Towards this end, our results should complement the results from market-based studies assessing the usefulness of comprehensive income.

Evidence to date suggests that analysts do use, although not fully, information contained in past prices, past earnings and past forecast errors (Abarbanell and Bernard 1992; Ali et al. 1992). Thus, if analysts fully understand the implications of the existence of unrecognized items (which results in differences between comprehensive income and net income) when the information is disclosed at year t, then analysts should be able to use comprehensive income information in revising their forecasts for earnings of year t+1. Specifically, if comprehensive income were useful and relevant as argued in Biddle and Choi (2006), then we would expect that analysts would use it in revising their forecasts for future periods when comprehensive income information becomes available. Furthermore, if analysts have difficulty in judging whether managers will recognize such previously unrecognized items during the incoming period, the accuracy of analysts' forecast may decrease. Moreover, as argued earlier, large unrecognized gains (losses) may represent the fact that the firm is performing much better (worse) than the markets' expectation. Hence, if the market's expectation is somehow incorrect and if analysts' consensus forecasts proxy for the market's expectation, then it would result in larger *ex post* forecast errors. Consequently, the magnitude of unrecognized gains/losses would be associated with analysts' earnings forecasts errors.

6) Chaney et al. (1999), for example, assess whether restructuring charges affect analysts' forecast revision and error.

The results in the paper are consistent with the notion that managers use their discretion to choose the timing of the recognition of the components of comprehensive income depending upon their underlying economic performance. We provide support for the notion that comprehensive income is incrementally useful in predicting subsequent period changes in net income and documents that comprehensive income is associated with analysts' earnings forecast revisions and forecast errors. Specifically, we find that analysts revise their forecast downward when comprehensive income is smaller than net income (that is, when the sum of other comprehensive income (OCI) items is negative), but they do not revise their forecast upward when comprehensive income is greater than net income (that is, when the sum of OCI items is positive). The results also suggest that the existence of unrecognized items is systematically associated with forecast error, especially when comprehensive income is smaller than net income. These results are consistent with analysts' failure to fully utilize the information disclosed in comprehensive income.

This paper is organized as follows. The next section discusses the related literature. Section 3 describes the data, sample selection, and the measurement of variables used in the study. The empirical results are discussed in section 4 and Section 5 concludes the paper.

RELATED LITERATURE

Evidence to date on the usefulness of comprehensive income has been mixed. Cheng et al. (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, they find evidence that supports 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 et al. (1999) compared the adjusted R^2s for several models of returns on items of other comprehensive income. Calculating comprehensive income in accordance with

SFAS No. 130, they document that the only component of comprehensive income that improves the earnings-return relation is the marketable securities adjustment. Further their 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. O' Hanlon and Pope (1999) also find "little evidence that U.K. dirty surplus accounting flows contain value relevant items."

Using an experimental approach, Hirst and Hopkins (1998) reported that comprehensive income is useful for analysts only when it is reported as a separate statement but not useful when it is reported as part of the statement of changes in stockholders' equity. In contrast, Maines and McDaniel (2000), also using an experimental approach, reported that comprehensive income is useful regardless of the format.

Focusing exclusively on disclosures of comprehensive income in the Statement of Changes in Equity, Cahan et al. (2000) did not find any evidence of incremental value relevance of such disclosures. More recently, Biddle and Choi (2006) however, show that comprehensive income was incrementally value relevant even before the enforcement of SFAS No. 130. They attribute the failure of prior studies to identify the usefulness of comprehensive income to the use of a 'relative association' as opposed to an 'incremental association' test.[7)]

In addition, research that examine components of comprehensive income, such as Ahmed and Takeda (1995), Barth et al. (1996), Eccher et al. (1996) and Nelson (1996) also provide mixed evidence on the association between marketable securities adjustment and returns for banks and/or thrifts.

In summary, the evidence to date on the usefulness of comprehensive income and its components is inconsistent. In contrast to most prior studies, this paper examines the usefulness of comprehensive income disclosures from a predictive point of view. We do so by examining whether comprehensive income can predict subsequent period realized net income and whether analysts incorporate such information in their earnings forecasts.

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7) See Biddle et al. (1993) for a detailed discussion of the differences between these two approaches, particularly for assessing the usefulness of accounting numbers.

DESCRIPTION OF DATA AND SAMPLE SELECTION

Our initial sample comprises of all observations in the Annual Industrial Compustat for the period 1998-2003. We start our sampling period from 1998 to ensure that our sample firms report their comprehensive income disclosures in accordance with SFAS No. 130. We then require that (a) all necessary data are available, (b) the stock price at the beginning of the fiscal year is greater than or equal to $5, and (c) the sum of absolute value of individual OCI item is greater than 0.1% of the market value of the equity at the beginning fiscal year.

Since the focus of our analysis is on prediction of future earnings, we use analysts' forecast data ending in fiscal year 2005. Among the sample selection criteria, the first requirement eliminates observations that had missing data for any of the variables used in the analyses. The second requirement was imposed since the beginning stock price variable is used as a deflator in this study. The $5 restriction enabled us to avoid the small denominator problem. The third restriction is to ensure that our sample firms have due influence from comprehensive income disclosures as we focus on the difference between net income and comprehensive income. This approach to examining differences is guided by the evidence in Dhaliwal et al. (1999) and Biddle and Choi (2006) who document that net income and comprehensive income are very highly correlated.[8] The Pearson (Spearman) correlation between net income and comprehensive income for the sample used in this study is 0.9318 (0.8984) is significant at the 1 percent level ($p<.001$), suggesting significant correlations even after removing observations for which the amount of OCI items is zero or very small. Because of this high correlation, focus on comprehensive income itself to examine the incremental usefulness of comprehensive income may lead to erroneous conclusions. To control for this problem, this study eliminated observations that have a trivial amount of OCI.

8) One possible reason that Dhaliwal et al. (1999) failed to find the value-relevance of comprehensive income is this high correlation. After removing observations that have no OCI items, Biddle and Choi (2001) found that comprehensive income is actually value-relevant information.

Analysts' forecasts data were retrieved from the IBES detail tape to remove the possible influence of stale observations contained in the IBES summary tape. A total of 9,512 observations were retrieved from Compustat after using our sample selection filter. Among these samples, sample observations are further reduced due to missing analysts' forecasts in the IBES data. The excluded observations are those not followed by any analyst or those followed but for which no analysts' forecasts were available for the period starting three months before the annual earnings announcement date and ending four days before the date (period 1), and the period starting three days after earnings announcement date and ending three months after the date (period 2). To measure revision in analysts' forecasts, we need an observation for which at least an analyst announces earnings forecasts during both period 1 and period 2. Hence, our empirical analysis uses a total of 5,237 (2,961) firm-year observations forecast revisions for year t+1 (t+2). For the analysis on the accuracy of forecasts, a total of 5,196 (2,945) observations are used for year t+1 (t+2).

Measurement of Variables

Analysts' Forecast Revision (FREV). We examine analysts' forecast revisions surrounding the earnings announcement to determine whether analysts view the information in comprehensive income as informative or uninformative. We measure it as the change of analysts' consensus forecasts for future year' earning (year t+1) after the release of current year's earnings (year t). This change is scaled by the stock price at the beginning of the fiscal year. The consensus forecasts before the earnings announcement are calculated as the mean of analysts' forecasts announced during the period (period 1) starting three months before the annual earnings announcement date and ending four days before the date. If an analyst announced multiple forecasts during this period, we use only the last forecast to remove the influence of stale forecasts. The consensus forecasts after the earnings announcement are calculated as the mean of analysts' forecasts announced during the period (period 2) starting three days after earnings announcement date and ending three months after the date. We use the first forecast

announced during this period if an analyst announced multiple forecasts during the period. The revision is the change of consensus forecast measured in period 2 from that measured in period 1.

$$REV = \frac{(\text{consensus forecast in period 2} - \text{consensus forecast in period 1})}{\text{Price}}$$

Analysts' Forecast Error (ERROR). We measure forecast error the difference between the consensus (mean) forecast and *ex post* actual earnings reported in IBES. The use of IBES reported actual earnings ensures that we have a consistent measure of both reported earnings and forecasts. We measure this variable by using analysts' forecasts announced during period 2. Thus, these analysts' earnings forecasts for year t+1 are the first forecasts announced after the release of annual earnings at year t.[9] This difference between analysts' consensus forecast and earnings was scaled by the stock price at the beginning of the fiscal year. Thus forecast error is represented as follows:

$$ERROR = \frac{\text{consensus (mean) forecast in period 2} - \textit{ex post} \text{ earnings}}{\text{Price}}$$

Comprehensive income (CI). Following Dhaliwal et al. (1999) and Chambers et al. (2005), we define comprehensive income as 'as-if SFAS No. 130 comprehensive income.' Under SFAS No. 130, the three items initially included in OCI are the change in unrealized gains and losses on marketable securities (SEC), the change in the cumulative foreign currency adjustment (FCT), and the change in additional minimum pension liability in excess of unrecognized prior service costs (PEN). To provide evidence on comprehensive income as it is defined as SFAS No. 130, we compute as-if SFAS No. 130 comprehensive income as net income adjusted for these three dirty surplus items.[10] Thus,

9) While one may argue that these forecasts are stale for purposes of assessing forecast errors, the use of forecasts closer to the earnings announcements of period t+1 will not allow us to capture the information in comprehensive income, as other information including three quarterly earnings would contaminate our tests. Hence we chose the first forecast after the release of period t earnings.

OCI, which represents the difference between net income and our definition of comprehensive income, is equal to the sum of the following three variables:

(i) Adjustment for unrealized holding gains (losses) on marketable securities (SEC) measured as the change of Compustat data item # 238.

(ii) Adjustment for foreign currency translation (FCT) measured as the change of Compustat data item #230.

(iii) Adjustment for pension liability (PEN) measured as the change in additional minimum pension liability in excess of unrecognized prior service costs (.65 times the change of Compustat data item #297 - #298, if less than zero).[11)]

Control for Firm-specific factors

We use a multivariate framework to examine the association between analysts' forecast revisions and forecast errors; and information in comprehensive income. However, before we can examine the multivariate association, we have to consider the potential impact of firm-specific factors that are known to affect analysts' forecasts. We consider the following variables:

Firm size (SIZE): Kross et al. (1990) have shown that forecast accuracy is an increasing function of firm size. Thus we use firm size as a control variable. We measure size as the natural logarithm of the fiscal year's beginning market value of equity. We also used total assets as an alternative measure of size.

Analyst Following (ANA): Bhushan (1989) shows that analyst following increases with firm size, while Kross et al. (1990) show that forecast accuracy is associated with analysts following. In addition, Lys and Soo (1995) present evidence that the level of analysts' following is correlated with analysts' forecast accuracy

10) Later, SFAS No. 133 results in two additional components of OCI: unrealized gains and losses from cash flow hedges and unrealized gains and losses from a foreign currency hedge of a net investment in a foreign operation. We exclude these items from our OCI measure due to two reasons: first, currently Compustat doesn't provide the amounts of these two items. Second, adding new items from a post-SFAS No. 130 period may introduce unnecessary noise. Thus, we confine our definition of OCI to the initial three items included in SFAS No. 130 consistently throughout the sample period.

11) Unlike the other two (SEC and FCT) variables that have either positive or negative values, PEN variable can have only negative values (only unrecognized losses but no unrecognized gains).

as it reflects the extent of competition among analysts. We therefore control for the number of analysts following in assessing the association between properties of analysts' forecasts and comprehensive income. We measure this variable as the natural logarithm of the number of analysts following the firm in the period 2.

Loss Firms (LOSS): Das (1998) has shown that accuracy for loss firms is quite different from that for profit firms. We therefore control for this in our multivariate tests by using a dummy variable to represent observations where analysts forecast losses.[12)]

Book-to-Market Ratio (BM): Richardson et al. (2001) and Choi and Ziebart (2004) both argue that book-to-market ratio is related to forecast error in analysts' earnings forecasts. They suggest that book-to-market ratio generally represents the growth potential of a firm. High growth firms have incentives to guide analysts towards announcing biased forecasts in order to beat the market's expectation (Richardson et al. 2001). To isolate the association between comprehensive income and forecast properties, we therefore control for the extent to which book-to-market may influence analysts' forecasts. We measure this variable by the fiscal year's beginning book-to-market ratio.

EMPIRICAL RESULTS

Preliminaries

The descriptive statistics of the variables used in this study are reported in table 1. With the exception of forecast revision (FREV) which measures the revision in forecasts from period 1 to period 2, all the summary statistics of variables are those measured during period 2 (year t+1), which is the year following the release of comprehensive income information of the current year (year t). This measurement scheme is consistent with our goal of assessing whether analysts incorporate the information

12) We also use the dummy variable having value 1 if actual *ex post* earnings of year t+1 are loss, and 0 otherwise. Although the variable becomes more significant in most analyses, the results are qualitatively similar and thus not reported.

Table 1. Descriptive statistics

Variable	Mean	Variance	5%	25%	50%	75%	95%	N
NIC_{t+1}	.0083	.0215	-.1829	-.0220	.0076	.0358	.2040	9,423
NIC_t	-.0019	.0175	-.1876	-.0274	.0046	.0279	.1662	9,423
NI	.0237	.0199	-.2012	.0083	.0492	.0793	.1484	9,423
CI	.0236	.0224	-.2142	.0011	.0470	.0813	.1713	9,423
OCI_t	-.0001	.0030	-.0502	-.0076	-.0012	.0072	.0496	9,423
UE	-.0002	.0009	-.0109	-.0005	.0004	.0020	.0106	5,237
SEC	.0008	.0009	-.0148	-.0001	0	.0003	.0207	5,237
FCT	.0003	.0012	-.0261	-.0028	0	.0027	.0305	5,237
PEN	-.0007	.0001	-.0002	0	0	0	0	5,237
SIZE	7.3416	3.1394	4.6909	6.0663	7.1710	8.5229	10.5458	5,237
BM	.4957	.1363	.0849	.2600	.4284	.6506	1.1312	5,237
$LOSS_1$	.0852	.0779	0	0	0	0	1.0000	5,237
ANA_1	1.9096	.5253	.6931	1.3863	1.9459	2.4849	3.0910	5,237
$FREV_1$	-.0025	.0006	-.0274	-.0057	-.0005	.0023	.0159	5,237
$FREV_2$	-.0020	.0004	-.0264	-.0049	-.0003	.0023	.0153	2,961
$ERRR_1$	.0085	.0030	-.0296	-.0044	.0006	.0127	.0676	5,196
$ERRR_2$	.0125	.0065	-.0589	-.0077	.0028	.0235	.1098	2,945
$LOSS_2$	1.7326	.5417	.6931	1.0986	1.6094	2.1972	3.5835	2,961
ANA_2	1.8860	.5084	.6931	1.3863	1.9459	2.3979	3.4965	2,961

Variable Definitions:

NIC_t = (NI_t - NI_{t-1}) scaled by beginning market value of equity at year t-1;
NI_t = net income at year t scaled by beginning market value of equity;
CI_t = = (NI + SEC + FCT + PEN) at year t scaled by beginning market value of equity;
OCIt = (SEC + FCT + PEN) at year t scaled by beginning market value of equity;
UE = the unexpected portion of annual earnings announcement at year t
= (actual earnings — analysts' forecasts for year t's earnings)/fiscal year t's beginning stock price;
SEC = the unrealized holding gain (loss) of marketable securities scaled by year t's beginning market value of equity;
L_SEC = unrealized loss of marketable securities (= SEC if SEC<0); 0 otherwise;
FCT = the change of foreign currency translation adjustments scaled by year t's beginning market value of equity;
L_FCT = foreign currency translation loss (= FCT if FCT<0); 0 otherwise;
PEN = the unrecognized minimum pension liability scaled by year t's beginning market value of equity;
SIZE = the natural logarithm of the fiscal year's beginning total assets;
BM = the fiscal year's beginning book-to-market ratio;
$LOSS_i$ = 1 if actual earnings reported for the year t+i is below 0; 0 otherwise;
ANA_i = the natural logarithm of 1 plus the number of analysts following the firm for year t+i's earnings;
$FREV_i$ = analysts' forecast revision for year t+i earnings forecasts;
$ERROR_i$ = (analysts' forecast — actual *z* earnings) for year t+i /fiscal year's beginning stock price;

contained in comprehensive income released in year t for year t+1 income rather than assessing their ability to anticipate or forecast year t income inclusive of comprehensive income. Of the 9,512 observations, we remove 89 outliers (0.94%), which have either NIC_{t+1}, NIC_t, or OCI_t greater than 1 or smaller than –1. Hence, the remaining 9,423 observations are used to calculate the distributions reported in table 1. For other variables, we report the data based on 5,237 observations, which will be used in the analyses on analysts' forecasts.

The mean value of net income deflated by the market value of equity (NI) is 0.0237 while the mean value of comprehensive income deflated by the market value of equity (CI) is 0.0236 and hence the mean difference (OCI) is –0.0001. The distributions of the three components of OCI (SEC, FCT, and PEN) show that many of the observations are equal to zero. The mean value of firm size (SIZE, the fiscal year's beginning market value of equity) is 7.3416 and that of book-to-market ratio (BM) is 0.4957. The sample distribution of the natural logarithm of the number of analysts following the firm (ANA) suggests that the mean (median) number of analysts following our sample 1.9096 (1.9459). In table 1, the mean revision in analysts' forecasts for year t+1's earnings (FREV1) is –0.0025 while median is -0.0005. The mean (median) one-year ahead analysts' signed forecast error (ERRR1) is 0.0085 (0.0006). These show that analysts, on average, revised earnings forecasts downward during our sample years. This finding is consistent with the claim in Richardson et al. (2001) that analysts generally start off being initially optimistic, and downgrade their forecasts as they approach the end of the fiscal period being forecasted.

Comprehensive Income and Future Earnings

Managers have considerable discretion, both in the timing and measurement of reporting the components of comprehensive income. Hence, like accruals, they are likely to affect income in future periods when such unrecognized items are recognized. We therefore investigate the relation between comprehensive income and future earnings. We hypothesize that managers do not recognize unrecognized gains (CI > NI) when they do not need to do so. Such a situation will arise if the firm is in a financially

Table 2. Current period other comprehensive income and current/future earnings change

PANEL A: Changes in earnings for each OCI quintile

OCI_t Quintile	Mean(Median) OCI_t	Changes in current and future earnings	
		Mean(Median) NIC_{t+1}	Mean(Median) NIC_t
Quintile 1	-.04772 (-.02658)	-.00588 (.00299)	-.01105 (.00056)
2	-.00580 (-.00534)	-.00044 (.00527)	-.00389 (.00377)
3	-.00055 (-.00115)	.00451 (.00601)	-.00373 (.00420)
4	.00520 (.00469)	.01166 (.00895)	.00178 (.00567)
Quintile 5	.04844 (.02773)	.03169 (.01769)	.00757 (.00898)
Q5 – Q1 mean diff. t-value (p-value)	.09616 41.59 (p<.0001)	.03757 6.72 (p<.0001)	.01862 3.82 (p=.0001)
Q5 – Q1 median diff. Wilcoxon z-value (p-value)	.05431 61.37 (p<.0001)	.01470 9.97 (p<.0001)	.00338 6.65 (p<.0001)

PANEL B: Correlations between OCI and changes in earnings (p-values in parentheses)

Variables	OCI_t	NIC_{t+1}	NIC_t
OCI_t	1.0000	.1180 (<.0001)	.0764 (<.0001)
NIC_{t+1}	.0889 (<.0001)	1.0000	-.1075 (<.0001)
NIC_t	.0481 (<.0001)	-.1955 (<.0001)	1.0000

Note: Pearson (lower triangle) and Spearman (upper triangle) correlations are presented. All variable definitions are as given in table 1.

good situation and so the firm may not need additional gains to boost earnings and hence may save it and refrain from recording it. Similarly, managers will not recognize unrecognized losses (CI < NI) but recognize unrealized gains if they are in financial trouble. To inflate earnings, managers will typically delay the recognition of losses. In other words, we argue that unrecognized gains (losses) reveal the underlying economic situation of the company and firms end up performing better (worse), in subsequent periods, than what is predicted. This suggests that there is an association between current year comprehensive income and subsequent period net income.

Table 2 reports mean changes in current period and future period income in each quintile of other comprehensive income (OCI). The reported means correspond to raw changes scaled by the fiscal year's beginning market value of equity.[13] It can be seen from table 2, Panel A that for the greatest OCI quintile (Quintile 5) where firms have large positive unrecognized OCI gains (CI > NI) in current period, net income clearly increased from past year (t-1) to current year (t), and increased again from t to t+1. On the other hand, for the smallest OCI quintile (Quintile 1) where firms report large negative unrecognized OCI losses (CI < NI), the mean net income changes in both years are negative. We report two-tailed tests of the differences in mean and median in current and future period changes in net income between the bottom and top quintile of current period OCI. These differences are statistically significant at less than 1%. Further, it can also be seen from table 2, Panel B that the Pearson (Spearman) correlation between future earnings changes (NIC_{t+1}) and current year difference between comprehensive income and net income (OCI) is 0.0889 with a $p < 0.0001$ (0.1180 with a $p < 0.001$). In addition, the Pearson (Spearman) correlation between current earnings changes (NIC_t) and current difference between comprehensive income and net income (OCI) is .0481 with a $p < 0.0001$ (0.0764 with a $p < 0.001$). These results suggest a positive association between current period comprehensive income and current and subsequent period changes in net income.

Overall, the results of table 2 suggest that large unrecognized

13) Industry and year specific mean adjusted changes yield a similar result.

OCI gains (large positive values of the current period difference between comprehensive income and net income) are associated with significantly large positive changes in both current and next period net income while large unrecognized OCI losses (large negative values of the current period difference between comprehensive income and net income) are associated with negative changes in both current and future net income. These results provide evidence that managers use their discretion to choose the timing of the recognition of the components of comprehensive income depending upon their underlying economic performance.

Regression Analysis

To further investigate this relationship between current year comprehensive income and changes in subsequent period net income we regress current period net income on next period's change in net income to establish the predictive power of current period income in predicting subsequent period changes in income. We therefore estimate the following relationship:

$$NIC_{t+1} = a + b_1\, NI_t + error_t \qquad (1)$$

where the dependent variable NIC_{t+1} is the difference between next period and current period net income ($NI_{t+1} - NI_t$) scaled by beginning market value of equity, with NI_t being the net income at year t scaled by beginning market value of equity. The results of this estimation are reported as model 1 in table 3. It can be seen from table 3 that current period net income (NI) is statistically significant and has an inverse relationship with next period's change in net income. This specification is similar in spirit to Freeman, Ohlson, and Penman (1982) and consistent with their results we obtain a negative relationship between current period income and next period change in income.

Our interest however is in the incremental predictive power of comprehensive income. Hence, the true underlying specification to assess incremental power of CI over NI in predicting next period earnings change of interest is one which regresses CI on next period's net income after controlling for NI. However, since NI and CI are highly correlated, we replace it with model 2 where

Table 3. Association between comprehensive income and future earnings change

$NIC_{t+1} = a + b_1 NI_t + b_2 OCI_t + b_3 (OCI_t \times DP) + b_4 (OCI_t \times DN) + e_t$

Model	Intercept	NI	OCI	OCI*DP	OCI*DN	Adj. R2
model 1	.0177 (12.44***)	-.3939 (-39.71***)	-	-	-	.1433
model 2	.0176 (12.45***)	-.3914 (-39.57***)	.2084 (8.12***)	-	-	.1491
model 3	.0160 (10.40***)	-.3919 (-39.63***)	-	.2858 (7.42***)	.1348 (3.60**)	.1497

Note:
DP = a dummy variable that takes on a value of 1 if OCI>0 and zero otherwise
DN = a dummy variable that takes on a value of 1 if OCI<=0 and zero otherwise
All other variable definitions are as given in Table 1.
*, **, and *** = significantly different from zero at 10, 5, and 1 percent level (two-tailed test)

we regress OCI, the difference between current period net income and comprehensive income on change in next period's net income, after controlling for current period net income. Our primary interest therefore is in estimating the following relationship:

$$NIC_{t+1} = a + b_1 NI_t + b_2 OCI_t + e_t \quad (2)$$

where the dependent variable NIC_{t+1} and NI_t are as defined in equation (1) above and OCI_t is the difference in net income and comprehensive income at year t scaled by beginning market value of equity. A statistically significant coefficient on OCI_t (b_2) corresponding to a measure of current period comprehensive income would suggest that it is incrementally useful in predicting subsequent period earnings change after controlling for current period earnings (NI_t: b_1).

The results of estimating equation (2) are also reported in table 3. Focusing on model 2, we find that consistent with the estimation results of model 1, current period earnings (NI) is negatively associated with next period changes in earnings, i.e.,

it predicts subsequent period changes in earnings. Moreover, the coefficient on current period other comprehensive income (OCI=b_2) is positive and incrementally significant in predicting next periods' earnings change. The statistical significance of OCI provides support for the incremental predictive power of comprehensive income over and above current period net income. The positive sign on the coefficient on OCI_t suggests that next periods' change in income is positively associated with current period difference between net income and comprehensive income.

However, the specification in model 2 above does not distinguish between unrecognized OCI gains (CI > NI) and unrecognized OCI losses (CI < NI), and provides an 'on average' relationship. However, it is possible that the relationship between current period other comprehensive income and subsequent period change in income may be asymmetrical depending on the sign of OCI. As we can infer from table 2, managers can use their discretion to choose the timing of the recognition of OCI items. In such a case, managers may want to delay the recognition of unrecognized OCI losses until they become gains or until the amount of losses reduces in order to avoid the negative impact of the loss recognition on net income. This may result in higher predictability of positive OCI items for future earnings than negative OCI items. In other words, the implication of OCI for future earnings may be higher when current period comprehensive income is greater than net income, compared to when current period comprehensive income is less than net income. To examine this prediction, we modify model 2 so that OCI take on different coefficients depending upon whether CI > NI or CI < NI. We therefore estimate the following regression model:

$$NIC_{t+1} = a + b_1NI_t + b_2(OCI_t - DP) + b_3(OCI_t \times DN) + e_t \qquad (3)$$

In this model, the DP is a dummy variable that takes on a value of 1 if comprehensive income is greater than net income and zero otherwise, while DN is a dummy variable that takes on a value of 1 if net income is greater than comprehensive income and zero otherwise. The results from this estimation are reported in table 3 as model 3.

In table 3, we find that both unrecognized gains (OCI greater than zero) and unrecognized losses (OCI less than zero) are both positive and incrementally useful in predicting subsequent period net income. Moreover, the coefficient b_2 (0.2858) is significantly larger than the coefficient b_3 (0.1348) (F-value = 7.26, p-value = 0.0071), suggesting that a dollar of unrecognized gains is likely to result in 29 cent increase in next period's earnings changes while a one dollar of unrecognized losses is likely to decrease next period's income by only 13 cents. The positive sign on the coefficient for OCI (associated with unrecognized gains) is consistent with our results in table 2. This result is borne out even after controlling for the effect of current period net income.

These results provide further support to our inference from table 2 and confirm that managers use their discretion to time the recognition of the components of comprehensive income depending upon their underlying economic performance. More importantly, the results provide support for the notion that comprehensive income is incrementally useful in predicting subsequent period changes in net income.

Comprehensive Income and Analysts' Forecasts

Given the preceding evidence of an association between current period comprehensive income and subsequent period net income, it is natural to examine whether analysts appear to use such information in their subsequent period earnings forecasts. In investigating the association between analysts' earnings forecasts and comprehensive income we use a multivariate setting to control for firm specific and year specific effects.

Analysts may have some information on the degree to which managers use their discretion to time how much and when unrecognized OCI gains/losses will be recognized, and hence analysts may update their forecasts according to the disclosure of comprehensive income. However, they may not be able to fully comprehend the implications of these OCI items for subsequent periods' income and hence may fail to make unbiased predictions of future earnings. As a result, we would expect to see a systematic relationship between the OCI items and forecast revisions and forecast errors. Since comprehensive income

comprises of several component elements and firms are required to disclose such components, any investigation of the association must take account of the components and not just the aggregate value of comprehensive income. It is possible, for example, that analysts are in fact only using some of the components of comprehensive income and not all of them. Hence, the different components may be differentially associated with analysts' earnings forecasts.

First, security holding gains and losses (SEC) can be either gains or losses. The available-for-sale securities are securities not classified as held-to-maturity (reported as cost and no holding gains/losses are reported) or trading securities (reported as fair value and the holding gains/losses are included in net income). The realized gains/losses of available-for-sale securities are mostly included in non-operating income. However, for firms in the financial sector, this item could be included in operating income.[14] The recognition of this item is largely dependent upon managerial discretion. For example, managers can selectively sell marketable securities to increase (decrease) earnings or delay the recognition, and analysts may have trouble to see through this kind of opportunistic behavior of managers. Hence, SEC may be associated with properties of analysts' earnings forecasts.[15]

Second, foreign currency translation adjustment gains/losses (FCT) can also be either gains or losses. This item is the change of foreign currency translation adjustments. Although the recognized foreign currency translation gains/losses are included in non-operating income, this item represents the change of the value of foreign investments during the period caused by the changes in foreign currency translation (exchange) rates. The recognition of gains/losses from this item only occurs when the foreign assets are disposed, and the recognized gains/losses are included as non-operating income. As a result, it is subject to the opportunistic behavior of managers to a far lesser degree. A greater amount of 'foreign currency translation adjustment'

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14) See SFAS No. 115 "Accounting for certain investments in debt and equity securities for details."

15) This is more likely in the financial industry because security-trading gains (losses) are included in operating income for firms belonging to the industry. Hence, we repeat all our tests for the financial and non-financial firms separately and find results that are qualitatively similar.

implies that the firm has operations in foreign countries where currency translation rates have changed dramatically. When the foreign currency rate dramatically changes (and in 1990s, central and South-American countries experienced great change in there currency values and from 1997, Asian economic crisis started), analysts may not be able to anticipate the changes exactly. The change influences not only foreign currency translation adjustment but also the main business of the firm, which in turn influence the operating income. Hence, FCT may be associated with the revision and error in analysts' earnings forecasts even though the recognition of FCT itself is not directly related to operating income.[16)]

Third, pension liability adjustment losses (PEN) also depend on the managers' judgment but it can only be losses (no gains for PEN). This item is minimum pension liability in excess of unrecognized prior service cost. To decrease this item, firms need to contribute more money to pension fund, which means that firms need to incur more pension expense, which is included in operating income. By contributing more money to pension fund, firms decrease the amount of minimum pension liability, which, in turn, decreases PEN.[17)] Analysts and rational investors would include this item in their forecast revision of future earnings because the recognition of this item directly decreases operating income. In addition, this item could be related to error of analysts' forecasts if analysts' have difficulty in predicting managers' discretion accurately.

As suggested by the above discussion, all of the components except for pension liability losses are associated with unrecognized gains and losses. To allow for differential impacts of whether there are unrecognized gains or unrecognized losses, we use a dummy variable approach where L_SEC and L_FCT correspond to unrecognized losses in the respective components of comprehensive income.

Following the discussion in section 3.2 above, we examine the association between analysts' forecast properties and

16) For example, a currency devaluation of a foreign country against the US currency decreases the sales of US products in the country and thus decreases the operating income of the exporter (the US firms).

17) Firms can also change assumptions regarding future return on pension assets and thus decrease pension liability.

components of other comprehensive income after controlling for firm specific variables that are known to influence analysts' forecast. Specifically, we control for firm size (SIZE), book-to-market ratio (BM), analyst following (ANA) and the existence of negative net income. To control for loss firms we use LOSS as a dummy variable having the value 1 if analysts' consensus forecast is negative and 0 otherwise. In addition, we also control for year specific effects by adding yearly dummy variables.[18)]

Forecast Revisions

Our primary interest is in examining the association between components of comprehensive income and analysts' forecast revisions. Thus, the dependent variable is forecast revisions. Based on the preceding discussion, we use the following specification to examine the association between analysts' forecast revisions and comprehensive income in a multivariate setting:

$$\begin{aligned} FREV_i = {} & a + b_1UE + b_2SEC + b_3L\_SEC + b_4FCT + b_5L\_FCT \\ & + b_6PEN + b_7SIZE + b_8BM + b_9LOSS_i + b_{10}ANA_i \\ & + (\text{Fixed Effects} - \text{Year}) + e \end{aligned} \quad (2)$$

In the above specification, the aggregate difference between net income and comprehensive income (OCI) variable is divided into its three components (SEC, FCT, and PEN). SEC is the unrealized holding gains/losses on marketable securities. Thus, b_2 represents how the amount of SEC is associated with the revision in analysts' forecasts. FCT is the adjustment for the foreign currency translations, and PEN is adjustment for pension liability. The L-prefix associated with the components is intended to capture the differential effect of unrecognized losses separate from unrecognized gains. Note that PEN only has either zero or negative values, i.e. there are no unrecognized gains. Further, since analysts' forecast revisions incorporate their prior errors we use current period forecast errors (UE) as an additional control variable in examining forecast revisions. The coefficient on UE

18) For the sake of brevity, coefficient estimates on yearly dummies are not reported. Our results of estimating the model without the year dummies yielded qualitatively similar results.

(b_1) represents how analysts' update the forecast of future earnings based on current period forecast errors. The empirical results reported in table 4 are based upon deletion of outliers with an absolute value of standardized error greater than

Table 4. Association between revision in analysts' earnings forecasts and comprehensive income

$$FREV_i = a + b_1 UE + b_2 SEC + b_3 L\_SEC + b_4 FCT + b_5 L\_FCT + b_6 PEN + b_7 SIZE + b_8 BM + b_9 LOSS_i + b_{10} ANA_i + (Fixed\ Effects - Year) + e$$

	Dependent Variable			
	$FREV_1$		$FREV_2$	
	Total Sample	OCI > 0	OCI < 0	Total Sample
Intercept	-.0055	-.0035	-.0045	.0006
	(-6.22***)	(-2.71***)	(-3.34***)	(.42)
UE	.1862	.2747	.1000	.0743
	(6.07***)	(4.87**)	(2.63***)	(1.98**)
SEC	.0227	.0129	.0325	.0275
	(1.89*)	(1.50)	(1.16)	(1.12)
L_SEC	.0256	.0330	.0544	.0362
	(3.24***)	(.54)	(2.73***)	(.54)
FCT	-.0112	-.0068	-.0391	-.0036
	(-1.02)	(-0.51)	(-1.35)	(-.24)
L_FCT	.0243	-.0048	.0512	.0058
	(1.45)	(-.16)	(2.08**)	(.34)
PEN	.0867	-.1620	.0831	.0898
	(4.81***)	(-.69)	(4.15***)	(2.91***)
SIZE	.0003	-.0002	.0003	-.0001
	(2.11*)	(-1.05)	(1.89*)	(-.93)
BM	-.0001	-.0001	-.0015	-.0032
	(-4.22**)	(-2.38**)	(-2.23**)	(-4.18***)
LOSS	-.0102	-.0108	-.0095	-.0095
	(-9.28***)	(-6.38***)	(-6.84***)	(-7.07***)
ANA	.0009	.0013	.0008	.0005
	(2.85***)	(2.74***)	(1.75*)	(1.31)
N	5,174	2,054	3,105	2,909
Adj. R^2	.1154	.1494	.1018	.0858
Test of $b_2 + b_3$(F value)	23.42***	2.39	18.57***	2.35
Test of $b_4 + b_5$(F value)	2.15	1.19	2.32	.08

All variable definitions are as given in table 1.

*, **, and *** =significantly different from zero at 10, 5, and 1 percent level

three.[19] Moreover, all coefficients' standard errors are based on White's (1980) correction for heteroscedasticity.

It can be seen from table 4 that the coefficient of UE is positive and statistically significant across all regressions, suggesting that analysts update their forecasts for next year's earnings based on their current period forecast errors. Thus, when reported earnings of year t are better (worse) than forecasted, analysts revise their forecasts for year t+1's earnings to upward (downward). This result, consistent with earlier works, implies that analysts update their forecasts for future earnings based on the reported earnings of year t.

Further, we also find that for the total sample, two of the three components of comprehensive income (SEC and PEN) are significant as reported in column two of the table. These results suggest that analysts do consider unrealized security holding gains/losses and pension liability adjustment losses when they update their forecasts. In particular, SEC has a positive and significant coefficient estimate of 0.0227, and L_SEC has a positive coefficient estimate of 0.0483 (=0.0227+0.0256 and F=23.42), which suggest that when there exist unrecognized security gains (losses), analysts revise their forecasts upward (downward). Similarly, analysts' appear to revise their forecasts downward based on unrecognized pension losses (b_6=0.0867). The results also imply that neither gains nor losses arising from foreign currency translation adjustment (FCT) influence analysts' forecast revisions. These results are consistent with the notion that only SEC and PEN are included in operating income when they are recognized. Hence, analysts may have more incentives to use these components.

To investigate whether analysts differentially use information in comprehensive income disclosures depending on whether comprehensive income is greater (less) than net income, we partition the sample into unrecognized gains (i.e., OCI > 0) and unrecognized losses (i.e. OCI < 0). These results are reported in columns three and four of table 4. The results suggest that analysts' revisions are different whether there are unrecognized gains or unrecognized losses. Further, it can be seen from the

19) We also performed median quintile regression in order to minimize the influence of outliers without removing any observations. The results are qualitatively similar and hence not reported here.

table that none of the three components are statistically significant when there are unrecognized gains (OCI > 0) as reported in the third column of table 4. However, for unrecognized losses (OCI < 0), L_SEC (0.0869 =0.0325+0.0544 and F=18.57) and PEN (0.0831 and t = 4.15) are statistically significant. This result is consistent with the significance of L_SEC and PEN in the full sample. In addition, it implies that the significance of L_SEC and PEN in the full sample is primarily driven by observations with unrecognized losses. These results are consistent with the notion that analysts perhaps pay more attention to comprehensive income when there are unrealized losses than when there are unrealized gains.

Finally the fifth column of table 4 reports results using two year ahead forecast revisions for the full sample. This examination is motivated by the fact that there is no compelling evidence to suggest that comprehensive income adjustments flow through realized earnings within one year. It can be seen that except for the forecasts error (UE), the only association between forecast revisions and components of comprehensive income is with pension losses. This suggests that even though components of comprehensive income may not fully flow through the income statement in one year, analyst's two-year ahead forecast revisions seem to ignore OCI items other than pension losses.

Overall, the results in table 4 are consistent with the notion that analysts do not fully comprehend the information content of comprehensive income. Further, examining the coefficient estimates it is clear that analysts put more weight on the forecast error (UE) rather than on components of comprehensive income in revising their forecasts. These results are obtained even with (or without) controlling for SIZE, BM, LOSS, and ANA, which have significant coefficients, while the inference on the key variables of interest remains unchanged.

In conclusion, the results reported in table 4 show that analysts only use unrecognized security holding gains/losses and pension liability losses consistently in revising their forecasts. Moreover, they more likely revise their earnings forecasts for year t+1 downwards for the existence of unrecognized losses than unrecognized gains. It is thus interesting to note that analysts use information in the components of comprehensive income when there exist unrecognized losses in revising their forecasts.

However, the revised forecasts are still associated with the magnitude of the losses, as indicated by the statistically significant coefficient on 'LOSS', suggesting that the revision is not complete.

Forecast Error

Next we examine the association between components of comprehensive income and the signed forecast error in analysts' forecasts. Thus, the dependent variable is signed forecasts errors (bias). To examine this we modify equation (2) by replacing signed analysts' forecast error as the dependent variable. In addition, we no longer use a control for the forecast error UE.[20] Thus our empirical specification to assess the association between analysts forecast errors and OCI items is as follows:

$$\begin{aligned} ERROR_i = {} & a + b_1SEC + b_2L\_SEC + b_3FCT + b_4L\_FCT + b_5PEN \\ & + b_6SIZE + b_7BM + b_8LOSS_i + b_9ANA_i \\ & + (\text{Fixed Effects} - \text{Year}) + e \end{aligned} \quad (3)$$

The use of signed forecast error is motivated by our earlier argument that managers may use discretion to recognize gains and losses as a means to influence reported income. This suggests that the use of *unsigned* forecast errors to assess whether analysts appear to use information in comprehensive income, which has discretionary elements, may lead to erroneous conclusions as such a measure will ignore the direction of the error and only focus on the magnitude.[21] The coefficient estimate b_1 represents how the amount of security holding gains is associated with the error in analysts' forecasts. Similarly, b_3 represents how foreign currency translation adjustment gains are associated with forecast error. Alternatively, $b_1 + b_2$, $b_3 + b_4$, and b_5 represent how the unrecognized losses of the individual comprehensive income items are related to forecast error. All of the four control variables (SIZE, BM, LOSS, and ANA) are included in the model. The empirical results reported in table 5

20) When we include UE as an additional control variable, the results are qualitatively similar.

21) Inferences using unsigned forecast errors are similar and hence not reported here. These results are available from the authors on request.

Table 5. Association between analysts' earnings forecasts error and comprehensive income

$$ERROR_i = a + b_1SEC + b_2L\_SEC + b_3FCT + b_4L\_FCT + b_5PEN + b_6SIZE + b_7BM + b_8LOSS_i + b_9ANA_i + (Fixed\ Effects - Year) + e$$

	Dependent Variable			
	$ERRR_1$		$ERRR_2$	
	Total Sample	OCI > 0	OCI < 0	Total Sample
Intercep	.0164	.0122	.0200	.0349
	(6.58***)	(2.94***)	(6.25***)	(6.53***)
SEC	-.0334	-.0287	.0426	-.0502
	(-1.43)	(-1.13)	(.45)	(-1.39)
L_SEC	.0150	.0344	-.0590	-.0557
	(.37)	(.55)	(-.57)	(-.56)
FCT	-.0177	-.0122	.0155	.0713
(-.53)	(-.34)	(.37)	(1.22)	
L_FCT	-.0013	-.1232	-.0514	-.1789
	(-1.25)	(-.15)	(-1.91*)	(-.53)
PEN	-.1490	.2431	-.1602	.0001
	(-3.42***)	(.42)	(-4.17***)	(.24)
SIZE	-.0012	-.0007	-.0016	-.0019
	(-4.10***)	(-1.70*)	(-4.18***)	(-3.14***)
BM	.0049	.0026	.0061	.0025
	(3.10***)	(.81)	(3.38***)	(.80)
LOSS	.0052	.0039	.0065	.0419
	(2.54**)	(1.13)	(2.49**)	(8.21***)
ANA	-.0024	-.0019	-.0025	-.0081
	(-3.38***)	(-1.80*)	(-2.46**)	(-5.25***)
N	5,115	2,042	3,070	2,900
Adj. R_2	.0670	.0362	.0834	.1259
Test of $b_1 + b_2$(F value)	.32	.01	.18	.97
Test of $b_3 + b_4$(F value)	3.92**	1.36	3.51*	.64

All variable definitions are as given in table 1.

*, **, and *** =significantly different from zero at 10, 5, and 1 percent level

are based upon deletion of outliers with an absolute value of standardized error greater than three.[22] Moreover, as before, all coefficients' standard errors are based on White's (1980)

22) We also performed median quintile regression in order to minimize the influence of outliers without removing any observations. The results are qualitatively similar and hence not reported here.

correction for heteroscedasticity.

Results for the one-year ahead forecast errors are reported in the second, third and fourth columns of table 5, while those for the two-year ahead forecast errors are reported in the fifth column. Focusing on the one year ahead forecast errors for the full sample, it can be seen that PEN which always has negative values, has a negative coefficient implying that forecast error (or alternatively stated optimistic bias) increases as pension liability adjustment losses increase. Alternatively stated, unrecognized pension losses lead to more optimistic (or less pessimistic) forecasts suggesting that even though as per table 4, analyst revise their forecasts downward based upon unrecognized pension losses, the downward revision is not enough to fully offset the optimism in forecasts.

We also find that foreign currency translation gain adjustments are not statistically significant. However, for unrecognized losses in FCT (FCT + L_FCT), the coefficient estimate is {-0.0177 + (-) 0.0013= (-) 0.0190}, significantly negative (F=3.92). This suggests that forecast errors are inversely related to the magnitude of unrecognized losses in foreign currency translations. Hence as the magnitude of unrecognized losses in foreign currency translation increases, analysts' forecast errors become more optimistic. In addition, the SEC component is not statistically significant. It is also interesting to recall from table 4 that analysts in revising their forecasts use both SEC and PEN. However, table 5 shows that subsequent period forecast errors are not associated with SEC but are still related to PEN. A possible explanation for this result is that analysts are better able to interpret unrecognized gains and losses in SEC than PEN. These results are consistent with the notion that analysts do not fully utilize information in all of the components of comprehensive income.

Next we partition the sample into firms with overall unrecognized gains (OCI > 0) and those with unrecognized losses (OCI < 0). These results are reported in columns three and four of table 5. The results of partitioning the sample are generally consistent with the results in the full sample and confirm that analysts do not fully utilize the information contained in the components of comprehensive income.

Since there is no a priori reason to believe that unrecognized

gains and losses will pass through the income statement in one year, we also examine two-year ahead forecast errors. The results for the two-year ahead forecast errors reported column five of table 5. It can be seen, that the two-year ahead forecast errors do not have any statistically significant association with any of the components of comprehensive income. Thus it appears that analysts do not use information in comprehensive income in their two-year ahead forecasts.

In conclusion, the results pertaining to analysts' forecast errors suggest that analysts, as a whole, fail to fully understand the implications of all of the components of comprehensive income.

SUMMARY AND CONCLUSION

Using data during the sample period 1998 to 2003, this paper provides evidence on the predictive ability of comprehensive income disclosures. Specifically, the paper examines the ability of current period comprehensive income to predict subsequent period net income and whether financial analysts appear to use such information in making their earnings forecasts.

The evidence suggests that comprehensive income can predict subsequent period net income, over and above current period net income. We find that the existence of unrecognized gains represents an underlying economic status corresponding to the fact that the firm is performing better than market's expectation and hence managers do not need to recognize them to inflate earnings. In contrast, existence of unrecognized losses represents the fact that managers are delaying their recognition because the firm is performing worse than the market's expectation. Our results are consistent with the notion that managers use their discretion to choose the timing of recognition of components of comprehensive income depending upon the underlying economic performance of the firm.

The evidence also suggests that analysts revise their year t+1's forecast downward when comprehensive income is smaller than net income but they do not revise their forecast upward as much when comprehensive income is greater than net income. In addition, we find that some of the OCI components are

associated with subsequent period's forecast revision and forecast errors. However, analysts do not fully incorporate all of the information in comprehensive income. Our results are consistent with the notion that when net income is greater than comprehensive income, analysts face greater difficulty in predicting future earnings. Specifically, there is an asymmetry in that analysts' appear to use comprehensive income more in the presence of unrecognized losses, but the revised forecasts are still related to error in the forecasts.

Overall our results provide support for the ability of components of comprehensive income to predict subsequent period income.

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