COMPARING THE USEFULNESS OF NET INCOME VERSUS COMPREHENSIVE INCOME IN TERMS OF FIRM PERFORMANCE: BORSA ISTANBUL CASE

Merve ACAR[*]

Semra KARACAER[**]

Abstract

Based on the ongoing claims that comprehensive income measures financial performance better than net income, thus enhance the transparency and usefulness of financial statements, International Accounting Standard No.1 (IAS 1) allows reporting comprehensive income in a primary and separate financial statement. From this point forth, we compare the usefulness of comprehensive income with net income in terms of financial performance proxied by stock price, stock returns and operating cash flows. Using a sample of listed companies in Turkey, we find some evidence that comprehensive income is a better measurement than net income, especially explaining stock price and market returns. However, the association between comprehensive income and stock price is negative. In that sense, our findings are consistent with previous researches arguing that investors find the financial information in comprehensive income is more volatile, risky, transitory and incomplete than net income, resulting in decreased stock price.

Key Words: Comprehensive Income, Net Income, Clean Surplus Accounting, Dirty Surplus Accounting.

I. INTRODUCTION

Recent accounting literature largely focuses on information aspect of accounting data and thereby the questions about the best financial performance measurement account arise. In this sense, this paper discusses one of the most controversial issues tackled by Financial Accounting Standards Boards (FASB): Comprehensive income. As a matter of fact, Generally Accepted Accounting Principles (GAAP) Board supports "all-inclusive the income statement"

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[*] Department of Management Business School, Yildirim Beyazit University, Ankara, Turkey
[**] Department of Business Administration Faculty of Business & Administrative Sciences, Hacettepe University, Ankara, Turkey

which means all components of income (whether usual or unusual) should be reported in the income statement before net performance results are transferred to equity part of the balance sheet (Paton & Littleton, 1940). From this point of view, "comprehensive income is a measure of all changes in equity of an entity that result from recognized transactions and other economic events of the period other than transactions with owners in their capacity as owners" under the definition of FASB. Besides, reporting comprehensive income as a separate item in financial statements has been obligatory for the firms whose fiscal year starting from December 1997, under the context of SFAS 130. For European Union (EU) listed companies effective date for mandatory reporting of comprehensive income and its components is September 2007. However, discussions related to the composition of the income statement still holds on that many accounting professionals argue that only net income based on operating income should be reported in the income statement and nonrecurring gains/losses should be taken into consideration under retained earnings (Barker, 2004; Biddle & Choi, 2006; Kanagaretnam, Mathieu, & Shehata, 2009; Linsmeier, Gribble, Jennings, & Lang, 1997).

Reflection of this debate among financial statement users shows itself in decision-making processes that investors have been looking for an answer to which performance measurement account is best, net income or comprehensive income.

Searching for an answer to this research question, this paper evaluates and compares the usefulness of net income versus comprehensive income. Besides, we evaluated components of comprehensive income to see their relative ability to summarize firms' financial performance. The underlying reason behind this exercise is to be able to shed light on financial statement preparation process, as composition and presentation of comprehensive income and its components are still significant issues on research agendas of both FASB and International Accounting Standards Board (IASB).

The main objective of this paper is to contribute to an ongoing debate about comparing the effectiveness of net income versus comprehensive income as a financial performance indicator. In this context, our first research question is about whether comprehensive income is superior to net income in explaining firms' financial performance. Our performance proxies in this study are stock price, stock returns and operating cash flows. Throughout this paper, our second research question aims to convey information about predictive abilities of these two income measures. Hence, we seek an answer to whether comprehensive income or net income is better at predicting future financial performance.

We contribute to existing literature in two major aspects. First, several studies have been conducted on reporting comprehensive income both under US GAAP and IAS/IFRS regulations for companies operating in US or Europe to determine its potential effect on investor decisions (Agnes Cheng, Cheung, & Gopalakrishnan, 1993; Bamber, Jiang, Petroni, & Wang, 2010; Bhamornsiri & Wiggins, 2001; Cahan, Courtenay, Gronnewoller, & Upton, 2000; Chambers, Linsmeier, Shakespeare, & Sougiannis, 2007; Choi & Zang, 2006; Dastgir & Velashani, 2008; Dhaliwal, Subramanyam, & Trezevant, 1999; Jordan & Clark, 2011; Kanagaretnam et al., 2009; Maines & McDaniel, 2000; O'Hanlon & Pope, 1999; Pandit & Phillips, 2004). However, studies about emerging countries are very few. Within this study we focus on Turkey, one of the most prominent emerging countries, to investigate the effect of comprehensive income reporting on performance measurement. Turkey is characterized by historical cost based accounting system, hence working on Turkey context is also important to see the effect of fair value accounting on investor decisions and financial performance of firms as fair value accounting is fairly new for Turkish accounting culture. Second, because of missing data on comprehensive income and its components, prior research has tended to make analyses based on "as-if data" methodology, rather than "actual-data" methodology. Research shows that outcomes of "as-if" and "actual" data methodologies are different (Chambers et al., 2007) and "as-if" methodology suffers from measurement error bias (Kanagaretnam et al., 2009).

To overcome this problem, empirical tests are conducted upon actual data and by doing so, we believe to get more relevant and valid outcomes. In this paper, we consider a data set that comprises the financial statements of 122 companies that are listed in BIST (Borsa Istanbul) National-100 Index (totally 2.196 firm-quarters data). Turkish listed companies for the years 2009-2013 are analyzed and relative financial performances of net income versus comprehensive income are compared. The paper is organized as follows. Section 2 provides a background and literature review about prior research. Section 3 describes sample and methodology. Sample 4 reports descriptive statistics and other empirical results. Finally, Section 5 concludes the paper.

II. LITERATURE REVIEW

Statement of Financial Accounting Concepts No.1: Objectives of Financial Reporting by Business Enterprises (paragraph. 43, 1978, FASB) states that "([t]he primary focus of financial reporting is information about an enterprise's performance provided by measures of

earnings and its components". Within this framework, there has been an ongoing debate in the accounting literature that whether "all inclusive" (or comprehensive income) or "net income" (current operating performance) concepts measure the financial performance of the firms the best. This debate has not been concluded ever since the beginnings of accounting standard settings dated from the 1930s to present (Brief & Peasnell, 1996). Under the current operating income concept of net income, as normal and recurring items are included in the measurement of earnings, non-recurring items are excluded from earnings. On the other side, under the all-inclusive concept, all changes in stockholders' equity except investments by and distributions to stockholders are used for income calculations (Agnes Cheng et al., 1993). In other words, all-inclusive concept depends on the idea of clean surplus accounting principles that reported income includes all revenues, expenses, losses and gains without distinction of whether they are ordinary or not. This clean surplus view requires that everything related to value determinations of assets and liabilities of a firm should flow through the income statement and be reported at their fair (market) value.

Recently, Turkish Accounting Standards Board, just like other national and international accounting boards, has encouraged the reporting of clean surplus accounting principles (comprehensive income view) and fair value measures in determining financial statements. It has been obligatory for firms to report comprehensive income in financial statements beginning with January 2009. Before this date, comprehensive income was not shown in financial statements as a separate item, rather it had been calculated by using the items listed in the statement of changes in equity.

By determining the components of earnings, FASB and its predecessor, Accounting Principles Board, advocate the "all-inclusive", in other saying, comprehensive income, concepts of net income (FASB, 1984a, paragraph.35). Actually "clean surplus" accounting has its ground from valuation models (Ohlson, 1995a), specifically traditional residual income formula, and it is argued that clean surplus accounting leads to positive outcomes for firms, such as value creation process (Linsmeier et al., 1997). As far as residual income formula come to mind, while current valuations depend on forecasting future payoffs, current profitability (income) is the realization of previous periods forecasts (Ohlson, 1995a; Peasnell, 1982) . At this juncture, comprehensive income come into prominence at forecasting errors in equity valuation (American Accounting Association, 1997). Also here are some external and internal drives for FASB to focus on comprehensive income reporting (Johnson, Reither, & Swieringa, 1995; Khan & Bradbury, 2014). One of the most important tasks of the Board is related to

financial instruments accounting and to relieve the fair value accounting concerns, FASB has made it possible to exclude price changes of some instruments (such as cash flow hedges) from income. However, omitting these changes may result in lack of relevant information in decision-making processes as FASB takes side with reporting comprehensive income. Besides, reporting comprehensive income as a separate financial statement could reduce confusion about financial instrument reporting (Knutson, 1993). As an external factor, specifically financial analysts support for comprehensive income reporting as they argue it brings discipline to managers and analysts in decision-making process by taking all factors related to owners' equity and wealth into consideration, resulting in more efficient information (Linsmeier, Boatsman, Herz, & Jennings, 1998; Maines et al., 2002).

Advocators of comprehensive income argue that measuring the firm performance based on all-inclusive concept results in better results than another way of measuring as it includes all changes in the net assets of firms from the nonowner sources during a period (Dhaliwal et al., 1999). Value and forecasting relevance and also persistence is very important when evaluating earnings components (Feltham & Ohlson, 1995; Ohlson, 1995b, 1999). By this view, supporters of comprehensive income strongly suggest that disaggregating its components that show differences in persistence and predictive value results in more qualified financial statements (Jones & Smith, 2011). Also, the traditional income statement view is a narrow concept of realization as items are not recognized as revenue unless they turn into other assets, especially cash. Contrary to the traditional view, to a greater extent, comprehensive income is a wider notion of profit where revenue or expense is recognized even if it is unrealised (Lewis & Pendrill, 1994). So it shows the whole picture to financial statement users about firms performance which result in more relevant value determination (Keating, 1999; Robinson, 1991). To sum up, proponents of comprehensive income argue that financial reports prepared under clean surplus accounting principles are more relevant, transparent and accurate, also these financial statement provide users of this wide information with more clear forecasts about future performance of the firm which results in improved ability to predict future earnings and cash flows (Kanagaretnam et al., 2009).

Contrary to this view, there are supporters of current operating performance view (dirty surplus accounting) with their strong counterclaims. Maybe the most prominent dissenting opinion against comprehensive income view is its volatile nature. Proponents of current operating income view argue that transitory effects should be abstracted from net income to show current operating performance (Biddle & Choi, 2006). According to them, net income

should include recurring core business activities based on realization concept and measured by the historical cost to show the permanent financial performance of a firm (Kanagaretnam et al., 2009). The idea behind this argument is that financial statements prepared under dirty surplus accounting principles reflect the most accurate earnings performance of firms which results in more effective decision-making process for users of financial statements. Within this frame, because comprehensive income includes transitory items resulting from non-core business activities, it is harder for decision makers to predict the future cash flows and firm values (Bamber et al., 2010; Barker, 2004; Linsmeier et al., 1997; Yen, Hirst, & Hopkins, 2007). Supporting this argument, Black (1993) states that to minimize the noise and maximize the information value of earnings, accounting principles which require making earnings look more like value and less like a change in value should be chosen. By this means, transitory components of earnings will be reduced, leaving the permanent components to be shown in financial statements. Also, another strong counterview is related to volatility of comprehensive income when compared to net income, which results in higher risk perception about a firm (Hirst & Hopkins, 1998). Finally, it is argued that it is unnecessary to report comprehensive income separately as it is already disclosed in disaggregated form in the financial reports (Cahan et al., 2000).

Comprehensive income is defined in SFAS No.130 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" (FACB concepts statement No.6, Paragraph.70, 1985). Besides, it is in 1997 where comprehensive income concept turns into a new accounting standard at SFAS 130- reporting of comprehensive income by FASB. Under SFAS 130 components included in "other comprehensive income" are as follows: i) Changes in revaluation surplus, ii) Actuarial gains and losses on defined benefit plans recognized in accordance with SFAS 19 Employee Benefits, iii) Gains and losses related to translating the financial statements of foreign operations, iv) Gains and losses arising from remeasurement of available-for-sale financial assets, v) Gains and losses (the effective portion) on hedging instruments in a cash flow hedge.

In terms of performance measurement, the results on whether comprehensive income or net income is a better indicator are mixed and inconclusive. The inconclusive nature of the results can be related to research methodologies due to the fact that before implementation of SFAS 130 "as if methodology" has been extensively used to measure other comprehensive

income, which results in measurement error (Kanagaretnam et al., 2009). By using this methodology, Dhaliwal et al. (1999) find no clear evidence that comprehensive income is a better predictor than net income in terms of market value or cash flows. In their study, the only thing that improves the relationship between income and returns is "marketable securities adjustment" component of SFAS 130 "other comprehensive income".

Another study by using "as if methodology" Biddle and Choi (2006) find evidence that narrower definitions of income (comprehensive income adopted by FASB in SFAS 130) is a better measurement especially for contracting applications than net income and fully comprehensive income. On the other hand, in terms of predictive ability they find that no income definition clearly dominates the other in forecasting the future operating income. A broad definition of income is better in predicting future income values, but in predicting future operating cash flow net income is better. To sum, they state that comprehensive income dominates for information content, but it is the net income that is better for compensation contracting.

Another "as if methodology" used for comprehensive income measurement is the study of Demir, Bahadir, and Öncel (2013) which uses data including Turkish companies. They conclude that comprehensive income measures stock returns, operating cash flows and market value of equity better than the net income. They also find that separate components of comprehensive income except the revaluations of surplus adjustments are not necessary to report as only this item improves the association between security returns and comprehensive income.

Besides, Kose and Gurkan (2014) found that relationship between comprehensive income and market prices are statistically significant. However, our study differs from this study as they used different empirical model (Ohlson's residual income model) and also they analyzed banking sector and industrial sector at the same time. Contrary to this study, financial sector firms are fully excluded in this study regarding to different operational dynamics.

Agnes Cheng et al. (1993) find that investors are "fixated" on net income that they just ignore comprehensive income that they support the idea that net income or operating income measures financial performance better than comprehensive income. Similarly, Plenborg (1996) examines the Danish stock market for the period of 1985-1992 and concludes that comprehensive income is not a better measure than net income. According to the results, net income has more information value (in terms of estimating cash flows) while comprehensive income is more value relevant.

On the other hand, for U.K. firms O'Hanlon and Pope (1999) show that income reported under dirty surplus accounting is more value relevant which means comprehensive income has no superior value over net income. Dehning and Ratliff (2004) and Dastgir and Velashani (2008) also find no evidence supporting that comprehensive income is a better performance indicator than net income after implementation of SFAS 130.

Besides, there are also some studies which show that it matters to report comprehensive income as it is superior to net income. Cahan et al. (2000) find that comprehensive income is more value relevant than net income. They also show that investors value aggregated comprehensive income so there is no need to report separate components of comprehensive income. Kanagaretnam et al. (2009) also show that compared to net income aggregated comprehensive income is more strongly associated with both stock price and returns and also it is superior in predicting future cash flows. However, when it comes to predicting future values of net income, prior years' net income is better than comprehensive income. It is because of the transitory nature of comprehensive income to be a poor predictor of future profitability but according to the findings of this study, it is obviously more value relevant than net income (Kanagaretnam et al., 2009). Similarly, in their research Biddle and Choi (2006) and Chambers et al. (2007) also show evidence that comprehensive income is more value relevant than net income.

III. METHODOLOGY

Although our study builds upon the studies by Dhaliwal et al. (1999) and Demir et al. (2013) it differs in three important ways. First, besides return and operating cash flow models used by Dhaliwal et al. (1999), price models are included. Price models are used as including price and return models simultaneously are expected to help drawing more convincing evidence of the value relevance of net and comprehensive income (Kanagaretnam et al., 2009; Kothari & Zimmerman, 1995). Using only price models or return models can cause some statistical problems. For instance, the estimated slope coefficients are less biased in price models than return models (Kothari & Zimmerman, 1995). On the other hand, in terms of heteroskedasticity, price models have more econometric problems in the form of heteroskedastic specification errors (Christie, 1987). Last but not least, as stock return models often use change variables, omitted variables should have less of an effect (Kanagaretnam et al., 2009). Accordingly, using both price and return models may provide more convincing and less biased evidence.

Secondly, different from Dhaliwal et al. (1999) and Demir et al. (2013), we examine the association between price, market returns and operating cash flows between income items (net income vs. comprehensive income) using the actual data (rather than as if data) related to comprehensive income (itself and its components) in the post-adoption periods of SFAS 130 for a sample of Turkish firms. Using actual data provides the opportunity to make more accurate and reliable inferences about usefulness and effectiveness of comprehensive income by decreasing measurement error (Kanagaretnam et al., 2009). Also, in addition to current values of price, market returns, operating cash flows and future values of these variables are used in the analysis to observe the predictive abilities of net and comprehensive income. Finally, based upon the study by Kanagaretnam et al. (2009) we include gains and losses (the effective portion) on hedging instruments in cash flow hedges, an important component of other comprehensive income. Cash flow hedges are included in the analyses to draw some inferences about risk management and fair value concerns.

IV. EMPIRICAL ANALYSIS

IV.I. Sample and Descriptive Statistics

Our sample consists of the firms included in BIST (Borsa Istanbul) National Index. We analyzed BIST national index to see whether results obtained under "as if data" methodology (Demir et al., 2013) are supported by "actual data" methodology for Turkish companies. The sample covers the period from the first quarter of 2009 to the second quarter of 2013. Sample begins with the year of 2009, as for the firms in Turkey the comprehensive income was not required before 2009.

The initial sample comprised 2,196 firm-quarters. Given that some of our analysis use lagged variables, we lose an additional quarter of data, which reduces the sample to 2,103 firm-quarter observations for operating cash flow analysis, 2,155 firm-quarter observations for stock returns analysis and 2,173 firm-quarter observations for stock price analysis. Data on stock returns, market value of equity and number of common shares are gathered from BIST website, all the other data are obtained from the financial statements. Also, all variables except price and return are deflated by market value of equity (Dhaliwal et al., 1999). Descriptive statistics are given in Table below.

Table I. Descriptive Statistics

Variables	Mean	Median	Std. Dev.	Observations
P	10.099	3.68	26.630	2173
R	5.368	4.024	11.950	2155
MVE	2.58E+09	4.23E+08	6.18E+09	2177
OCF	15.454	15.878	2.656	2103
NI	19.726	13.289	8.323	2106
CI	22.303	10.544	8.364	2107
$CI_{FO\text{-}ADJ,t}$	19.534	10.350	8.310	2196
$CI_{AFS\text{-}ADJ,t}$	19.967	12.380	8.632	2196
$CI_{HEDGE\text{-}ADJ,t}$	18.631	10.096	8.138	2196
$CI_{TAX\text{-}ADJ,t}$	18.941	10.238	8.189	2196

P_t: The stock price per share
R_t: Quarterly buy and hold return
MVE_t: Market value of equity (price per share times number of common shares outstanding)
OCF_t: Operating cash flows
NI_t: Traditional net income (net income reported at the end of the quarter-includes all revenues and gains and relevant expenses and losses)
CI_t: Comprehensive income (comprehensive income reported at the end of the quarter)
$CI_{fo\text{-}adj,t}$: Net income adjusted for gains and losses from translating financial statements of a foreign operations
$CI_{afs\text{-}adj,t}$: Net income adjusted for remeasuring available-for-sale financial assets
$CI_{hedge\text{-}adj,t}$: Net income adjusted for gains and losses (the effective portion) on hedging instruments in a cash flow hedge
$CI_{tax\text{-}adj,t}$: Net income adjusted for gains and losses from deferred tax

IV.II. The Association Between Stock Price and Income Variables

As discussed earlier, results for comprehensive income and net income on measuring the firm performance are inconclusive. Within this frame, using "actual data" related to comprehensive income and its components, we re-examine this debating issue to provide further evidence.

In the analysis used in this study, we used models used in prior studies (Dehning & Ratliff, 2004; Dhaliwal et al., 1999; Kanagaretnam et al., 2009). Firstly, we used regression models which analyses the relative powers of comprehensive income and net income in explaining stock prices. In comparing their relative explaining power, all models were analyzed using pooled regression analysis. Models used in the study are as follow:

$P_t = \alpha_0 + \beta_1 * NI + \varepsilon_t$ Model1(a)

$P_t = \alpha_0 + \beta_1 * CI + \varepsilon_t$ Model1(b)

After analyzing the relationships between stock prices and comprehensive income and net income variables, we used regression models to observe the ability of comprehensive income components to summarize firm performance proxied by stock prices. These models used in the study are as follow:

$P_t = \alpha_0 + \beta_1 * CI_{FO\text{-}adj,t} + \varepsilon_t$ Model1(c)

$P_t = \alpha_0 + \beta_1 * CI_{AFS\text{-}adj,t} + \varepsilon_t$ Model1(d)

$P_t = \alpha_0 + \beta_1 * CI_{HEDGE\text{-}adj,t} + \varepsilon_t$ Model1(e)

$P_t = \alpha_0 + \beta_1 * CI_{TAX\text{-}adj,t} + \varepsilon_t$ Model1(f)

Table II. Association Between Stock Price and Income Variables

Dependent Variable: Stock price					
Independent Variables	Constant	Coefficient	R^2	Probability	Obs.
NI_t	0.1016	0.0720	0.001	0.1266	2097
CI_t	0.1029	-0.0896	0.003	0.0258**	2098
$CI_{FO\text{-}ADJ,t}$	0.1028	-0.0782	0.001	0.0928*	2152
$CI_{AFS\text{-}ADJ,t}$	0.1013	-0.0060	0.00	0.4329	2173
$CI_{HEDGE\text{-}ADJ,t}$	0.1025	-0.0719	0.001	0.1285	2152
$CI_{TAX\text{-}ADJ,t}$	0.1025	-0.0716	0.002	0.1301	2152

*, Significantly different from 0 at 10% level
**, Significantly different from 0 at 5% level
***, Significantly different from 0 at 1% level
Variables
P_t: The stock price per share
NI_t: Traditional net income (net income reported at the end of the quarter-includes all revenues and gains and relevant expenses and losses)
CI_t: Comprehensive income (comprehensive income reported at the end of the quarter)
$CI_{fo\text{-}adj,t}$: Net income adjusted for gains and losses from translating financial statements of a foreign operations
$CI_{afs\text{-}adj,t}$: Net income adjusted for remeasuring available-for-sale financial assets
$CI_{hedge\text{-}adj,t}$: Net income adjusted for gains and losses (the effective portion) on hedging instruments in a cash flow hedge
$CI_{tax\text{-}adj,t}$: Net income adjusted for gains and losses from deferred tax
All variables except stock price and stock returns are deflated by market value of equity.

The results of estimating models (1a) to (1f) are reported in Table.2. In terms of explaining the stock prices, comprehensive income is found to be more significant ($R^2 = 0.003$) than net income ($R^2 = 0.001$) at 5% statistical significance level. Net income is not found to have a significant relationship already. However, unexpectedly the relationship between comprehensive income and stock price is negative (with the coefficient of -0.089). In this frame, our finding is consistent with studies arguing that investors find the financial information in

comprehensive income is more volatile, transitory and incomplete than net income (Hirshleifer & Teoh, 2003; Khan & Bradbury, 2014; Maines & McDaniel, 2000; Yen et al., 2007). These studies argue that because investors perceive comprehensive income and its components more transitory they evaluate firm's performance as more volatile and riskier. Eventually, this perceived volatility and risk seem to be one of the reasons that decrease the stock price.

In terms of comprehensive income components, we find that "foreign currency translation adjustments" is the only component of comprehensive income that has the ability to explain firm performance reflected as stock price. Similar to comprehensive income, relationship between stock price and net income adjusted for gains and losses from translating financial statements of foreign operations is negative (with the coefficient of -0.078).

According to these results, it is possible to suggest that investors perceive comprehensive income and its related components more volatile and risky. This increased perceived risk and volatility of the firm's performance result in decreased stock price.

IV.III. The Association Between Stock returns and Income Variables

In addition to price model, we also use stock return model to investigate the value relevance of comprehensive income and net income. Stock returns as performance indicators have been largely accepted and used in most of the studies (Cahan et al., 2000; Chambers et al., 2007; Dhaliwal et al., 1999; Kanagaretnam et al., 2009). Also, we believe that using both stock price and returns model will provide more convincing and definitive results related to value relevance of comprehensive income and net income (Kothari & Zimmerman, 1995).

Regression models used in the analyses related to relationship between stock returns and comprehensive income, net income as well as comprehensive income components are as follow:

$R_t=\alpha_0+\beta_1*NI+\varepsilon_t$ Model2(a)

$R_t=\alpha_0+\beta_1*CI+\varepsilon_t$ Model2(b)

$R_t=\alpha_0+\beta_1*CI_{FO\text{-}adj,t}+\varepsilon_t$ Model2(c)

$R_t=\alpha_0+\beta_1*CI_{AFS\text{-}adj,t}+\varepsilon_t$ Model2(d)

$R_t=\alpha_0+\beta_1*CI_{HEDGE\text{-}adj,t}+\varepsilon_t$ Model2(e)

$R_t=\alpha_0+\beta_1*CI_{TAX\text{-}adj,t}+\varepsilon_t$ Model2(f)

The results of estimating models (2a) to (2f) are reported in Table.3. In terms of explaining stock returns both comprehensive income and net income are value irrelevant. However, it seems "adjustments in re-measurement of available-for-sale financial assets" as a

comprehensive income item has a significant positive relationship with stock returns (R^2=0.006 with the coefficient of 0.012).

Table III. Association Between Stock returns and Income Variables

Dependent Variable: Stock returns					
Independent Variables	Constant	Coefficient	R^2	Probability	Obs.
NI	0.0524	-0.0145	0.00	0.4944	2077
CI	0.0523	-0.0017	0.00	0.9222	2078
$CI_{FO-ADJ,t}$	0.0543	-0.0266	0.0008	0.2033	2152
$CI_{AFS-ADJ,t}$	0.0532	0.0127	0.006	0.0002***	2152
$CI_{HEDGE-ADJ,t}$	0.0541	-0.0162	0.0003	0.4467	2152
$CI_{TAX-ADJ,t}$	0.0541	-0.0165	0.0003	0.4359	2152

*, Significantly different from 0 at 10% level
**, Significantly different from 0 at 5% level
***, Significantly different from 0 at 1% level
Variables
R_t: One quarter buy and hold return
NI_t: Traditional net income (net income reported at the end of the quarter-includes all revenues and gains and relevant expenses and losses)
CI_t: Comprehensive income (comprehensive income reported at the end of the quarter)
$CI_{fo-adj,t}$: Net income adjusted for gains and losses from translating financial statements of a foreign operations
$CI_{afs-adj,t}$: Net income adjusted for remeasuring available-for-sale financial assets
$CI_{hedge-adj,t}$: Net income adjusted for gains and losses (the effective portion) on hedging instruments in a cash flow hedge
$CI_{tax-adj,t}$: Net income adjusted for gains and losses from deferred tax
All variables except stock price and stock returns are deflated by market value of equity.

IV.IV. The Association Between Operating Cash Flows and Income Variables

The performance of firm should be reflected in future income and operating cash flows beside stock returns models (Dechow, 1994; Skinner, 1999). According to Dhaliwal et al. (1999), if comprehensive income is better in measuring the firm performance than net income, then it is expected that future operating cash flows and future income should be more strongly associated with comprehensive income measures. To test this prediction, following models have been used in the study.

$OCF_{t+1}=\alpha_0+\beta_1*NI_t+\varepsilon_t$ Model3(a)

$OCF_{t+1}=\alpha_0+\beta_1*CI_t+\varepsilon_t$ Model3(b)

$OCF_{t+1}=\alpha_0+\beta_1*CI_{FO-adj,t}+\varepsilon_t$ Model3(c)

$OCF_{t+1}=\alpha_0+\beta_1*CI_{AFS-adj,t}+\varepsilon_t$ Model3(d)

$$OCF_{t+1}=\alpha_0+\beta_1*CI_{HEDGE\text{-}adj,t}+\varepsilon_t \qquad\qquad\qquad Model3(e)$$

$$OCF_{t+1}=\alpha_0+\beta_1*CI_{TAX\text{-}adj,t}+\varepsilon_t \qquad\qquad\qquad Model3(f)$$

Results for these models are presented in Table.4 below. According to these analyses, it seems all measures of income (both comprehensive income, net income as well as comprehensive income components) are significantly related with operating cash flows. However, net income is more value relevant (R^2=0.059 with the coefficient of 0.47) than comprehensive income measurement (R^2=0.049 with the coefficient of 0.37) in terms of its relationship to future operating cash flows. Consistent with study of Dhaliwal et al. (1999) future operating cash flows and net income are more strongly related than they are with comprehensive income, and this supports the transitory nature of comprehensive income. Also consistent with the study of Kanagaretnam et al. (2009), due to less transitory items, net income has higher predictive power than the comprehensive income and its components.

Table IV. Association Between Operating Cash Flows and Income Variables

Dependent Variable: Operating Cash Flows					
Independent Variables	Constant	Coefficient	R^2	Probability	Obs
NI	0.0050	0.4798	0.0592	0.0000***	2093
CI	0.0028	0.3775	0.0498	0.0000***	2094
$CI_{FO\text{-}ADJ,t}$	0.0038	0.4986	0.0665	0.0000***	2152
$CI_{AFS\text{-}ADJ,t}$	0.0151	0.0129	0.0011	0.0642*	2094
$CI_{HEDGE\text{-}ADJ,t}$	0.0052	0.4776	0.0589	0.0000***	2152
$CI_{TAX\text{-}ADJ,t}$	0.0052	0.4788	0.0593	0.0000***	2152

*, Significantly different from 0 at 10% level
**, Significantly different from 0 at 5% level
***, Significantly different from 0 at 1% level
Variables
OCF_t: Operating cash flows
NI_t: Traditional net income (net income reported at the end of the quarter-includes all revenues and gains and relevant expenses and losses)
CI_t: Comprehensive income (comprehensive income reported at the end of the quarter)
$CI_{fo\text{-}adj,t}$: Net income adjusted for gains and losses from translating financial statements of a foreign operations
$CI_{afs\text{-}adj,t}$: Net income adjusted for remeasuring available-for-sale financial assets
$CI_{hedge\text{-}adj,t}$: Net income adjusted for gains and losses (the effective portion) on hedging instruments in a cash flow hedge
$CI_{tax\text{-}adj,t}$: Net income adjusted for gains and losses from deferred tax
All variables except stock price and stock returns are deflated by market value of equity.

Also in addition to investigating value relevance of both comprehensive income and net income measures, we look at predictive powers of these income measures on future stock price, returns and operating cash flows. To analyze predictive powers of comprehensive income and net income we used one period (one-quarter) and four periods (four quarters=one year ahead) ahead performance measures. Results are listed in both Table.5 and Table.6.

While the relationship between comprehensive income and stock returns is statistically insignificant for period "t", when we look at period "t+1" this insignificant relation disappears. For one period ahead stock returns, the relationship between returns and comprehensive income is positive (0.03) and statistically significant (R^2=0.002) at 5% significance level. However, the association between net income and stock returns is still insignificant even for period "t+1". Also, consistent with results of period "t", adjustments in re-measurement of available-for-sale financial assets as a comprehensive income item still has a significant positive relation with stock returns (R^2=0.004 with the coefficient of 0.009). It is important to note that these significant and positive relations between stock returns and comprehensive income and adjustments in re-measurement of available-for-sale financial assets disappears for period "t+4". According to these results, we can say, comprehensive income is more value relevant than net income in predicting future stock returns. However, due to its transitory nature its predictive power decreases by the time.

Table.5 Predictive Values of Net Income and Comprehensive Income Variables

Dependent Variable: Stock returns$_{t+1}$					
Independent Variables	Constant	Coefficient	R^2	Probability	Obs.
NI	0.0519	-0.0108	0.00	0.6104	2071
CI	0.0506	0.0355	0.002	0.0494**	2072
CI$_{FO-ADJ,t}$	0.0541	-0.0127	0.00	0.5473	2152
CI$_{AFS-ADJ,t}$	0.0533	0.0098	0.004	0.0046***	2147
CI$_{HEDGE-ADJ,t}$	0.0541	-0.0149	0.00	0.4882	2152
CI$_{TAX-ADJ,t}$	0.0541	-0.0131	0.00	0.5420	2152
Dependent Variable: Stock price$_{t+1}$					
Independent Variables	Constant	Coefficient	R^2	Probability	Obs.
NI	0.1008	-0.0732	0.001	0.1181	2091
CI	0.1022	-0.0889	0.0024	0.0261**	2092
CI$_{FO-ADJ,t}$	0.1028	-0.0809	0.0014	0.0828*	2152
CI$_{AFS-ADJ,t}$	0.1012	-0.0057	0.00	0.4580	2167
CI$_{HEDGE-ADJ,t}$	0.1025	-0.0746	0.00	0.1155	2152
CI$_{TAX-ADJ,t}$	0.1025	-0.0742	0.00	0.1173	2152
Dependent Variable: Operating Cash Flows$_{t+1}$					
Independent Variables	Constant	Coefficient	R^2	Probability	Obs.
NI	0.0150	0.0138	0.00	0.7506	2065
CI	0.0147	0.0173	0.00	0.6410	2064
CI$_{FO-ADJ,t}$	0.0150	0.0284	0.00	0.5035	2152
CI$_{AFS-ADJ,t}$	0.0159	-0.0050	0.00	0.4672	2088
CI$_{HEDGE-ADJ,t}$	0.0153	0.0138	0.00	0.7484	2152
CI$_{TAX-ADJ,t}$	0.0153	0.0160	0.00	0.7094	2152

* Significantly different from 0 at 10% level
** Significantly different from 0 at 5% level
*** Significantly different from 0 at 1% level

Table.6 Predictive Values of Net Income and Comprehensive Income Variables

Dependent Variable: Stock returns$_{t+4}$					
Independent Variables	Constant	Coefficient	Adj. R^2	Probability	Obs.
NI	0.0516	-0.0145	0.00	0.4888	2059
CI	0.0517	-0.0037	0.00	0.8338	2060
CI$_{FO-ADJ,t}$	0.0541	-0.0082	0.00	0.6961	2152
CI$_{AFS-ADJ,t}$	0.0539	0.0005	0.00	0.8753	2135
CI$_{HEDGE-ADJ,t}$	0.0543	-0.0189	0.00	0.3786	2152
CI$_{TAX-ADJ,t}$	0.0543	-0.0179	0.00	0.4051	2152
Dependent Variable: Stock price$_{t+4}$					
Independent Variables	Constant	Coefficient	R^2	Probability	Obs.
NI	0.0967	-0.0408	0.00	0.3341	2077
CI	0.0980	-0.0635	0.0015	0.0790*	2078
CI$_{FO-ADJ,t}$	0.1024	-0.0511	0.00	0.2741	2152
CI$_{AFS-ADJ,t}$	0.1014	-0.0034	0.00	0.6598	2153
CI$_{HEDGE-ADJ,t}$	0.1023	-0.0477	0.00	0.3158	2152
CI$_{TAX-ADJ,t}$	0.1022	-0.0467	0.00	0.3256	2152
Dependent Variable: Operating Cash Flows$_{t+4}$					
Independent Variables	Constant	Coefficient	R^2	Probability	Obs.
NI	0.0164	0.0466	0.00	0.2865	1998
CI	0.0177	-0.0014	0.00	0.9694	1999
CI$_{FO-ADJ,t}$	0.0146	0.0522	0.00	0.2214	2152
CI$_{AFS-ADJ,t}$	0.0159	-0.0025	0.00	0.7180	2074
CI$_{HEDGE-ADJ,t}$	0.0148	0.0485	0.00	0.2646	2152
CI$_{TAX-ADJ,t}$	0.0146	0.0551	0.00	0.2047	2152

* Significantly different from 0 at 10% level;
** Significantly different from 0 at 5% level;
 *** Significantly different from 0 at 1% level.

When it comes to future stock price, results for period "t+1" and "t+4" are consistent with findings of period "t". The only significant relations observed for the future stock price

are comprehensive income and foreign currency translation adjustments. As observed in period "t", the relation between comprehensive income (and also foreign currency translation adjustments) and stock price is still negative for periods "t+1" and "t+4". This finding is again inconsistent with negative perceptions of investors against comprehensive income and its components. Comprehensive income components such as available for sale securities, foreign currency translations, pension obligations and hedging activities are all about unrealized gains and losses. Unrealized gains and losses included in these items are the result of uncontrollable and volatile market forces, as a result, they are transitory in nature (Bamber et al., 2010). Because unrealized gains and losses on other assets and liabilities are not recognized, they are perceived as an incomplete measurement of firm's performance. Besides their perceived volatility and higher risk, this incomplete information comprehensive income and its components have also cause decreased stock price (Hirshleifer & Teoh, 2003).

While all measures of income have statistically significant relations with operating cash flows, these significant results disappear for predicting future operating cash flows, for both period "t+1" and period "t+4". We think this situation is most probably stems from transitory items included in comprehensive income and net income.

Also, it is important to note that low R^2 values obtained in both analyses are similar to results of other studies in this area (Dehning & Ratliff, 2004; Dhaliwal et al., 1999; Kanagaretnam et al., 2009) as all the analyses both in this study and the other studies are based on univariate regression models. To illustrate, stock prices depend on many factors such as capital structure, firm size, profitability, market value, liquidity, ownership structure, interest rate, gross domestic product, etc. (both micro and macro factors) (Campbell & Shiller, 1988; Fama & French, 1988; Fitzpatrick, 1994; Wang & Xu, 2004). However, here in this study stock prices (like other dependent variables) are predicted with only net income or comprehensive income variables to observe which income variable explains the dependent variable (here is stock price) the best. Since, these low R^2 values are expected from the beginning because of univariate analysis.

V. CONCLUSION

Reporting the comprehensive income, from its presentation method (as a separate financial statement or under owner's equity in the balance sheet) to its content (to decide whether its components only make noise or not) and potential benefits has been a controversial issue. Besides, it is still under dispute that which financial performance measures do investors

mostly prefer and why. To find an answer to these issues from a different income approach, there are lots of studies that analyze how financial statement users price, evaluate and respond to comprehensive income and its components besides net income (traditional income approach). Within this context, our study has examined the potential effect of comprehensive income reporting on firms' financial performance. We have extended the literature by comparing these two income measures, net income versus comprehensive income, as well as components of comprehensive income in terms of current and future financial performance under an emerging market concept.

Our sample, composed of firms listed at Borsa Istanbul National100 index, showed a significant result about comparing net income and comprehensive income. Apart from other studies, we have analyzed future income and cash flows as well as return models to get more reliable and valid results for market and firm-specific implications. Empirical results suggest that in terms of explaining firm performance by price models, comprehensive income is more value relevant than net income. However, apart from most of the research, the association between comprehensive income and stock price is negative. In that sense, our finding is consistent with studies arguing that investors find the financial information in comprehensive income is more volatile, transitory and incomplete than net income (Hirshleifer & Teoh, 2003; Khan & Bradbury, 2014; Maines & McDaniel, 2000; Yen et al., 2007). These studies argue that since investors perceive comprehensive income and its components more transitory, they evaluate firm's performance as more volatile and risky.

When it comes to comprehensive income components, only "foreign currency translation adjustments" make noise in the financial statements. Similar to comprehensive income, the association between stock price and net income adjusted for gains and losses from translating financial statements of foreign operations is negative.

Throughout this study, in addition to stock price, we have analyzed the effect of reporting comprehensive income on stock returns. There is no superiority between net income and comprehensive income in terms of explaining stock returns, that is both are value irrelevant. However, it seems "adjustments in re-measurement of available-for-sale financial assets" as a comprehensive income item has a significant positive relationship with stock returns.

According to the results obtained for operating cash flows, both income measures (net income, comprehensive income and components of comprehensive income) have the ability to explain the operating cash flows. Even so, due to transitory nature of comprehensive income, net income explains operating cash flows better than comprehensive income.

Last but not least, comprehensive income and net income also differ in terms of predictive values. For both stock returns and stock prices, comprehensive income is superior to net income, most probably due to predictive powers of some components which are exclusive of net income. Speaking of stock returns, the insignificant association between comprehensive income and stock returns turns to a positive relation for future periods, with the stimulating effect of adjustments in re-measurement of available-for-sale financial assets as a comprehensive income item. Besides, as a better predictor the association between future stock price and comprehensive income (and foreign currency translation adjustments) holds negative. To sum it up, empirical findings support the arguments that investors have negative perceptions against comprehensive income and its components. They perceive comprehensive income and its related components more volatile and risky. This increased perceived risk and volatility of the firm's performance result in decreased stock price. Also, it is important to note that, the predictive power of comprehensive income decreases by time, most probably due to its volatile and incomplete nature.

The inferences drawn in this study are subject to some caveats that should be taken into consideration. First, due to data constraints, quarterly data was used in the analyses. Also since data related to comprehensive income and its components are hand collected from companies' financial statement, sample period ends with 2013. For this reason, it can be recommended for future research to extend the sample period. Besides, our analyses focus on Turkish firms operating in different sectors, so future research can focus on companies in same or similar industries. Lastly, what we examine in this study is an association rather than causality. Therefore, researchers cannot conclude that accounting information (net income or comprehensive income) directly changes the price or returns. Future research might more directly test the value relevance of comprehensive income and its components.

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