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Is other comprehensive income items value relevant in Nigeria?

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Abstract
The switch over of Nigerian publicly listed interest entities to the International Financial Reporting Standard (IFRS) represents some new requirement to reporting firms. Beginning 2012, Nigerian reporting entities are marking-to-market certain financial assets and liabilities and recognizes holding gains and losses arising from such accounting flows as Other Comprehensive Income (OCI). The objective of this study is twofold. The first objective is to investigate the value relevance of OCI items (fair value gains and losses on revaluation of non-current assets, available-for-sale financial assets and actuarial gains and losses on defined benefit plans). The second objective is structured to examine whether OCI items provides incremental information beyond net income. A sample of 117 firms listed on the Nigerian Stock Exchange comprising of 37 and 80 financial and non-financial firms respectively were used. Based on the price and return regressions, the result suggests that only re-measuring of available-for-sale financial asset is value relevant. No evidence found to establish dominance of any OCI item over the traditional net income. This attempt is the initial evidence that demonstrates the benefits arising from fair value gains and losses by Nigerian firms.

Keywords: other comprehensive income, value relevance, financial assets

Introduction

The extensive use of accounting information for valuation purposes underscores the importance of value relevance research (Beaver, 2002), particularly for accounting earnings. The focus of financial reporting on earnings has shifted to an all-inclusive performance reporting when assessing the value added to the owners' equity during a reporting period (Kanagaretnam, Mathieu, & Shehata, 2009; Jones & Smith, 2011; Firescu, 2015; Usman, Amran, & Shaari, 2017). All-inclusive income approach would "display all of an entity's wealth changes except those arising from transactions with its owners" (Cahan, Courtenay, Gronewoller, & Upton, 2000). On this ideology, some psychology-based financial reporting theorist have argued that the visibility of OCI on the face of primary financial statements will probably lessen the cost of processing information, reduce the propensity of losing vital information and reduces earnings management (Beaver, 1986; Hirst & Hopkins 1998).

Despite the efficacy of all-inclusive performance reporting, concern over trade-off between relevance and reliability has been discussed (Song, Thomas, & Yi, 2010; Lee & Park, 2013). Reason had been that other comprehensive income usually includes numerous "mark-to-market or mark-to-model" types of adjustments and managers may have the motivation to misrepresent fair value inputs for personal benefits (Bartov, Mohanram, & Nissim, 2007). A general perception of the likelihood of measurement errors and intentional manipulation exists when using discretion to determine the

economic value of OCI items (Song et al., 2010; PCAOB, 2011; Lee & Park, 2013). Such sharp practices create information asymmetry between investors and managers that can be a serious threat to the reliability of fair values earnings (Landsman 2007; Penman 2007). For instance, unlike the re-measuring of marketable-securities that is often derived based on the quoted prices in an active marketplace, revaluation of non-current assets and pension-liability adjustments may require professional judgments that are generally less reliable (Dhaliwal, Subramanyam, & Trezevant, 1999; ong et al., 2010; Lee & Park, 2013). These problems are expected to become more severe as fair value inputs become less observable by investors. This submission does not undermine managers' use of discretion to credibly report fair value information (Lopes & Walker, 2012; Lee & Park, 2013).

Equivocal result has been presented on the usefulness of OCI items. For instance, unrealized gains and losses on financial assets are the most important for firms in the financial services industry (Barth et al., 1998). Cahan et al. (2000) find no evidence that asset revaluation increments and foreign currency translation adjustments are more value relevance beyond total comprehensive income for New Zealand firms. The amount of foreign currency translation adjustments and unrealized gains and losses of marketable securities are positively priced by investors (Chambers et al., 2007). Kanagaretnam et al. (2009) provided evidence of positive and negative share price and stock returns reaction to available-for-sale investments and cash flow hedges respectively. In some studies, the value relevance of OCI varies with the level of subjectivity involved in establishing a fair value amount (Wang, Buijink, & Eken, 2006; Lee & Park, 2013; Khan & Bradbury, 2014; Lu & Mande, 2014). Perhaps, this difference could be due to the data set and the asymmetrical importance of each component across firms and industries.

Effective 2012, Nigerian reporting entities are marking-to-market certain financial assets and liabilities and recognizing holding gains and losses arising form fair value gains and losses on revaluation of non-current assets, available-for-sale financial assets and actuarial gains and losses on defined benefit plans as OCI. This paper is structured to provide empirical evidence on these fair value accounting flows using sample of companies listed on Nigerian Stock Exchange between the years 2010 to 2014 (NSE). On this area of research, no previous study attempted examination of the value relevance of these accounting flows in Nigerian capital market. This paper provide evidence of a positive association between available-for-sale financial assets with share price and stock returns; and a negative association between the change in fair value of non-current assets and pension adjustment. No evidence found to establish dominance of any OCI item over the traditional net income. Thus, providing empirical evidence on OCI items, an area largely unexplored, this paper contributes to and extends the value relevance literature on comprehensive income reporting. The remainder of this paper is organized as follows: section two presents the review of related works and hypothesis development. Research method is presented in section three. Section four presents findings; and section five is the conclusion of the study.

Literature Review

Literature has highlighted that broader definitions of income are more useful for investment decisions, such an assumption is not the case for other OCI items (Biddle & Choi, 2006). Diverse results have been presented regarding the incremental value

relevance OCI items such as unrealized gains and losses on available-for-sale securities, gains and losses on non-current assets, extraordinary items, pension reserves and changes in foreign currency translation adjustments. Some psychology based-researchers such as Hirst and Hopkins (1998) and Maines and McDaniel (2000) backed the stance that alternative earnings could mean more reliable information to the users of financial statement.

Based on the above claims, Barth and Clinch (1998) documented varying results depending on asset class. The revalue aggregate Property, Plant and Equipment (PPE) was strongly associated with share prices for the entire sample of firms. This evidence holds true when the sample was partitioned for smaller nonfinancial and financial firms. Cahan et al. (2000), Wang et al. (2006) and Chambers et al., (2007) documented evidence that asset revaluations have explanatory power for the market value of equities. Thus, these studies recognised fair value gains and losses on non-current assets as an important input for assessing the market value of a firm. Cahan et al. (2000) stressed further that fair value gain and losses on non-current assets provides better incremental information than net income. On the contrary, fair value gains and losses on non-current assets was regarded as less consistent and less useful in explaining share prices (O'Hanlon & Pope, 1999). Brimble and Hodgson (2008) revealed that revaluation of assets in Australian firms did not incrementally impact stock prices. They explained further that the irrelevance of asset revaluations mirrors the negative reported mean, which demonstrates a period of "declining asset prices after the high interest rate regime of the late 1980's and early 1990's".

Next is the incremental value relevance of fair value gains and losses on available-for-sale securities. Studies in this regard view the re-measuring financial assets as a strategy for communicating the underlying market value of a firm's financial assets to investors (Dhaliwal et al., 1999; Chambers et al., 2007; Kanagaretnam et al., 2009). According to Barth et al. (1995) and Dhaliwal et al. (1999), only fair value gains and losses on the marketable securities among the SFAS 130 items examined for firms in the United States explained the market value of equities. Additional tests from these studies indicate that the incremental information of marketable securities is driven by firms listed as financially oriented entities. Other items of SFAS 130 aside from the marketable securities adjustment "merely add noise to the comprehensive income".

Moreover, Kanagaretnam et al. (2009) provided evidence that available-for-sale financial assets and cash flow hedges components are significantly associated with price and market returns for sample of Canadian firms. Goncharov and Hodgson (2011) documented that unrealised gains and losses on held-for-sale securities provide better incremental information than net income for investors for a sample of continental European firms. These findings are based on the assumption that available-for-sale financial assets are liquid assets that can be quickly converted into financial wealth, which are understood by most market participants and can easily be evaluated. Mitra and Hossain (2009) and Kubota, Suda, and Takehara (2011) claimed that accounting information was more effectively evaluated by the market when such information is recognized in the financial statements rather than disclosed only in the financial footnotes. Both found fair value gains and losses on marketable securities to be negatively associated with the market value of equities. According to Kubota et al. (2011), the variations in the market value of firms due to

continuing price changes, sometimes in erratic pattern, may be a plausible reason for the result of later studies.

Extant literature has examined whether actuarial gains and losses was value relevant and provides incremental information to investors. For instance, Mitra and Hossain (2009) and Jones and Smith (2011) considered actuarial gains and losses to be value relevant. Dhaliwal et al. (1999) came to the opposite conclusion in that changes in "additional minimum pension liability in excess of unrecognised prior service cost" were not positively priced. One possible explanation for Dhaliwal et al.'s (1999) results is that the determination of minimum pension liability involves some level of management discretion in establishing fair value estimates and hence adds noise to the reported fair value earnings. Thus, because pension adjustments are derived from changes in the fair value of the plan assets and liabilities that move in tandem with market-wide movements, changing market conditions may cause "many companies to record additional minimum pension liabilities" (Jones & Smith 2011). This could justify the irrelevance of fair value plan assets and liabilities documented in Dhaliwal et al. (1999).

From the above studies, evidence in the literature is equivocal about the value relevance of dirty surplus flows. Thus, a clear conclusion cannot be drawn on the incremental value relevance of OCI items. This could suggest that the IASB prediction on the importance of these items to investors, creditors and other financial statement users in evaluating economic activities of firms is not yielding the desired objective (Chambers et al., 2007; Mechelli & Cimini, 2014). Perhaps, the variations in the findings of previous studies can be attributed to differences in the data sets, definitions of OCI items in the various reporting environments, and the transitory nature of OCI items and periods examined (Dhaliwal et al., 1999; Chambers et al., 2007).

Prior to 2012, the NG-GAAP did not require separate presentation of other comprehensive income items in a primary financial statement. However, the adoption of IFRS requires firms to disclose unrealized gains and losses on marketable securities, gains and losses on non-current assets and pension reserve adjustments in a separate statement called statements of comprehensive income. This requirement, apart from enhancing greater accounting disclosure, will provide investors with different financial performance indicators that can be analysed independently. These components of OCI such as fair value gains and losses on non-current assets (RFA), fair value gains and losses on available-for-sale marketable securities (AVFS) and actuarial gains and losses on pension plan (PENA) in the NSE market are expected to provide incremental information. In line with the above argument, the following premise is expected to be verified:

$H_{1:}$ O*ther comprehensive income items are value relevant in the Nigerian capital market.*

$H_{2:}$ *Other comprehensive income items provides incremental information, but with a coefficient lower that the traditional net income in the Nigerian capital market.*

Methodology

Data was collected on share prices; dividend and accounting data were from the Thomson Reuters DataStream (Universiti Utara Malaysia), except for OCI items and data on compliance, which were hand collected from the annual reports for the study period. This extraction procedure suggests that our sample consists of Nigerian firms we had access to their annual reports over the period of 2012 to 2014. Since OCI items occurs at

a random (zero in expectancy), an additional condition, which required that at least one item is non-zero was assumed consistent with previous studies (Kanagaretnam et al., 2009; Kubota et al., 2011; Lee & Park, 2013; Mechelli & Cimini, 2014). This is to ensure that, a unit of analysis has at least one or a combination of fair value gains and losses on the non-current assets, available-for-sale financial assets and actuarial gains and losses. Based on this criterion, our sample comprises of 349 firm-year observation drawn from 117 firms.

Considering the small number of listed entities in Nigeria and size difference, skewed data cannot be avoided. This great disparity in size could suggest heteroskedasticity due likelihood of outliers (Gujarati, 2003). To ensure that this concern do not bias our research results, all the variables are winsorized at 2% consistent with Kubota et al. (2011) and Mechelli and Cimini (2014). By windsorization, the larger negative loss at the lower end are reduced but does not free the data from negative OCI items. As recommended by Hayn (1995) and implemented in Barth et al. (2012); Mechelli and Cimini (2014) and Khan and Bradbury (2014), we control for firms with negative earnings by including a dummy variable "*L"* in our estimations which is assigned the value of 1 for negative net income and 0 otherwise. Similar to Kanagaretnam et al. (2009) and Mechelli and Cimini (2014), a well-known theoretical work of Ohlson (1995) in which firm market value is view as a function of book value of equity and earnings was used similar as:

$$MVE_{it} = \beta_0 + \beta_1 BV_{it} + \beta_2 E_{it} + \beta_3 V_{it} \text{.....1}$$

MVE_{it} represent the market capitalization, which is a product of total number of shares outstanding and unit price per share. BV_{it} equal to book value of equity scaled by outstanding shares; E denotes earnings for the year scaled by outstanding shares and V_{it} stand for other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements. The subscript *i* and *t* refer to firm and year. The focus of this paper is to examine the value relevance of OCI items given the book value and net income. To verify hypotheses of the study, Eq. (2) that is based on an expanded version of the valuation function in Eq. (1) and it is similar to that used by Cahan et al. (2000) and Kanagaretnam et al. (2009) to demonstrate the conditions where NI and OCI items are individually value relevant and whether NI is more superior than OCI items as expressed below:

$$SP_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 RFA\_S_{it} + \beta_4 AVFS\_S_{it} + \beta_5 PENA\_S_{it} + \beta_6 L_{it} + \varepsilon_{it} \text{.....2}$$

Where some of the parameters are as previously defined, SP_{it} = share prices four months after the end of the financial year. Since Nigerian companies are mandated to file their annual reports with the Security and Exchange Commission (SEC) 90 days after the accounting year-end, four month share price was used. Our choice of SP and the calculation of stock returns in the subsequent model are based on the assumption that market participants have access to all available information for decision-making and have been incorporated by investors (Barth et al., 2008; Harris & Muller, 1999). RFA_S_{it} = per share changes in revaluation surplus; $AVFS\_S_{it}$ = per share changes in gains and losses on re-measuring available-for-sale financial assets; $PENA\_S_{it}$ = per share actuarial gains and losses on defined benefit plans; L_{it} = an indicator variable, taking the values of 1 for loss firms and 0 otherwise and it interaction with earnings components and ε_{it} = the disturbance term. All coefficients of the parameters are expected to be positively associated with share price and stock returns except for L_{it} .

A common weakness of using price model is that it is pones to heteroskedastic specifications error (Kothari & Zimmerman, 1995), which could lead to a misleading inference. To address this issue, we utilized "heteroskedasticity-consistent covariance matrix estimator 3 (HC3)" consistent with Tsalavoutas, André and Evans (2012). This heteroskedastic correction method produces more conservative confidence intervals, which make it more appropriate than White's (1980) basic method (MacKinnon & White, 1985; Tsalavoutas, André & Evans (2012). Scale bias is another frequently cited problem that may lead to heteroskedasticity when using price model. Following prior studies (Barth et al., 2008; Hung & Subramanyam, 2007; Tsalavoutas, et al. 2012), we first deflated our parameters by the total outstanding shares. We also report analysis of parameters deflated by the beginning market value of equity using weighted least squares (WLS) consisted with Dechow, Hutton and Sloan (1999) and Tsalavoutas, et al. (2012).

To avoid scaling problems and ensuring the robustness of our result, we employ a return model as an alternative approach of investigating the incremental value relevance of OCI items. Kothari and Zimmerman (1995) pinpointed the economic advantages and disadvantages of using return model, price model or both, saying that while price model "gives economically sensible earnings response coefficient, return models have less serious econometric problems than price models". Therefore, in order to ensure a more robust inference and to reduce bias interpretation of statistical results, both models should be tested. We specified the following return models.

$$RET_{it} = \alpha_0 + \alpha_1 NI_{it} + \alpha_2 \Delta NI_{it} + \alpha_3 RFA_{it} + \alpha_4 AVFS_{it} + \alpha_5 PENR_{it} + \alpha_6 L_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots 3$$

Where other variable are previous defined, RET_{it} = stock returns (inclusive of dividends) commencing eight months before and ending four months after the fiscal year end; the additional suffix "Δ" denotes a change between periods *t*-1 and t for NI. All independent variables in the return model are deflated by the closing price at the beginning of the return year and are expected to be positively associated with stock returns except for a_6 and a_7 expected to be negative.

Previous studies of this nature are conducted based on the assumption that the adjusted R^2 will increase once OCI items are added to the book value of equity and net income or by analyzing whether the coefficients of OCI are different from zero (Cahan et al., 2000; Kanagaretnam et al., 2009). We rely on three conditions in examining the the incremental value relevance of OCI items. Recall we hypothesized that OCI items provides incremental information, we test the null hypothesis that the coefficients (β_3 to β_5) of models 2 and 3 are equal to zero in the first methodology. Second, we also predicted coefficient of OCI items to be lower than NI, here we compare the coefficients of OCI items and verify whether the difference between them are statistically significant with that of NI.

4. Results and Discussion

4.1 Descriptive

For Table 1 Panel A presents the summary of full sample and it indicate that nonfinancial firms have the greatest proportion. Panel B provides an auxiliary breakdown of sub-sectors in our major classification of financial and nonfinancial firms. While Banks, Insurance companies and Investment and Financial Services constitute the financial sector, the sample firms in the nonfinancial category are from many industries, with the greatest proportion from Manufacturing, Consumer goods and Services and agricultural firms being the least. Panel B suggest that the sample has a wider coverage of Nigerian capital firms.

Table 1
Descriptive statistics Related to sample firm from 2012 to 2014.

Sample	Financial	Nonfinancial	Total
Panel A: Sample Calculation			
Publicly traded Nigerian firms	52	137	189
Less:			
Companies with zero OCI	9	43	52
Companies without information on share price and Dividend	6	14	20
Total number of firms included	37	80	117
Firm-year observations	131	237	368
Lost firm-year observations due to extremely large share price	8	11	19
Final firm-year observation	123	226	349

Panel B: Composition by industry	Firm-year Obs	%	Number of firm	%
Financial				
Banks	68	55.28	19	52.78
Insurance	46	37.4	14	38.89
Investment and Financial Services	9	7.32	3	8.33
Total	123	100	36	100
Nonfinancial				
Agriculture	15	6.64	4	5
Consumer Goods	46	20.35	17	21.25
Construction	23	10. 18	6	7.5
Healthcare	14	6.19	5	6.25
Oil and Gas	22	9.73	7	8.75
Manufacturing	69	30.53	26	32.5
Services	37	16.37	15	18.75
	226	100	80	100

The sample comprised of Nigerian firms with at least one item of OCI between 2010 and 2014.

Table 2 presents the descriptive statistics for NI, changes in the value of non-current assets (RFA_S), changes in gains and losses on re-measuring available-for-sale financial assets (AVFS_S) and actuarial gains and losses on defined benefit plan (PENA_S). The independent sample five- year mean (median) of SP is N37.78 (N12.00) and N16.15 (N3.97) for the two cases and mean (median) of RET is N4.53 (1.26) and N2.27 (N1.55) for the period of 2010 to 2014 suggest a great disparity between the samples in terms of performance. The pooled five-year mean (median) of NI_S for financial firms are positive 0.15 (0.02) and they are much lower 0.77 (0.19) for nonfinancial firms. The mean for RFA_S is 0.019 and 0.481, AVFS is -0.001 and PENA_S is 0.020 and 0.005 and 0.119 for financial and nonfinancial firms. Based on the return model, as presented in Panel B, NI has a mean (median) of 0.011 -(0.315) and 0.416 (0.096). The average OCI items for financial (nonfinancial) firms range from 0.022 (0.20), 0.014 (0.026) and 0.015 (0.09) respectively. For both deflators, the mean for OCI items are greater for nonfinancial firms. What is striking in Table 2 is that the median values for the components of OCI item are

Table 2
Descriptive Statistics Related to the Regression Variables, 2010-2014

		Financial Firms				Nonfinancial Firms				
	Mean	Median	SD	Min	Max	Mean	Median	SD	Min	Max
Panel A: variables used in the association between share prices and OCI items										
SP_{it}	0.38	0.12	0.51	0.50	0.2	16.15	0.38	25.6	0.50	99.50
BVE_S_{it}	0.47	0.13	0.69	0.02	2.44	0.5	0.34	0.59	0.01	3.21
NI_S_{it}	0.1	0.02	0.52	-1.05	1.87	0.77	0.19	1.51	-0.63	5.69
RFA_S_{it}	0.18	0.04	0.55	-0.68	4.02	0.96	0.24	1.72	-0.66	6.14
$AVFS\_S_{it}$	0.02	0.01	0.18	-0.29	1.83	0.04	0.01	0.12	-0.13	0.48
$PENAS_{it}$	0.015	-0.47	1.01	-0.47	2.12	0.01	-0.43	1.00	-0.43	2.3
L_{it}	0.02	0.00	1.01	0.00	1.00	0.17	0.00	0.38	0.00	1.00
Panel B: variables used in the association between stock returns and OCI items										
RET_MC_{it}	0.46	0.13	0.6	0.5	3	2.27	1.55	2.17	-0.65	7.3
NI_MC_{it}	0.01	-0.31	1.01	-.11	3.03	0.42	0.10	1.68	-7.02	12.64
ΔNI_{it}	-0.01	-0.00	0.24	-0.77	0.88	-0.00	-0.00	0.26	-0.10	1.22
RFA_MC_{it}	0.057	0.06	0.17	-0.57	0.59	0.49	0.11	1.14	-0.73	4.21
$AVFS\_MC_{it}$	-0.01	0.00	0.19	-0.50	0.59	-0.00	0.10	0.41	-2.56	3.16
$PENA\_MC_{it}$	0.01	-0.27	1.01	-1.21	9.95	0.02	0.00	0.58	-0.06	0.23
L_{it}	0.15	-0.47	1.01	-0.47	2.12	0.00	-0.43	1.00	-0.43	2.30

V**ariable definitions**
Panel A: BVE_S_{it} = per share book value of common equity; NI_S_{it}: net income per share; RFA_S_{it} = per share changes in revaluation surplus ; $AVFS\_S_{it}$ = per share changes in gains and losses on re-measuring available-for-sale financial assets; $PENA\_S_{it}$ = per share actuarial gains and losses on defined benefit plans; $LI_{is\ an}$ indicator variable for loss firms and *i* and *t* refer to firm and year
Panel B: RET_MC_{it} = stock returns (inclusive of dividends) four months after the fiscal year end. Additional suffix "Δ" denotes a change between periods *t*-1 and t for each variable respectively. All other variables are earnings scaled by beginning price of equity.

almostzero, suggesting a low frequency of OCI items over the 2010–2014 as documented in Kanagaretnam et. al (2009) and Khan and Bradbury (2014). Even though the magnitudes are low for OCI items compared to NI, the minimum and maximum values portend a material impact

Table 3 Panels A to D is the correlation matrix for the variables used in testing the incremental value relevance of other comprehensive income items. As illustrated in the table, the explanatory variables are moderately correlated with each other except for the indicator variables for a reason earlier explained. There was no case of high correlation, suggesting no multicollinearity problem. The last column of Table 5 and Table 6 reveals the variance inflation factors for each independent variables and the mean for the entire models. The mean Variance Inflation Factor (VIF) for variables used in the price model and the return models were 1.14, 1.09, 1.74 and 1.11 for financial firms and likewise 1.04, 1.03, 1.06 and 1.08 for nonfinancial firms. Most variables in the models scored less than 2, suggesting no multicollinearity related problems. The result of regression analysis is presented in the following subsections.

Table 3
Correlation Matrix and Pearson Correlation Coefficients for Regression Variables

Variables	SP_{it}	BVE_S_{it}	NI_S_{it}	L_{it}	RFA_S_{it}	$AVFS\_S_{it}$	$PENA\_S_{it}$
Variables Used in the Price Model							
Panel A: Financial Firms							
SP_{it}	1						
BVE_S_{it}	0.421*	1					
NI_S_{it}	0.286*	0.114	1				
L_{it}	-0.141	-0136	-0.064	1			
RFA_S_{it}	-0.225*	-0.104	-0.038	-0.094	1		
$AVFS\_S_{it}$	-0.154*	-0.121	0.078*	-0.111	-0.063	1	
$PENA\_S_{it}$	-0.091	-0.031	-0.011	-0.133	0.011	0.146	1
Panel B: Nonfinancial Firms							
SP_{it}	1						
BVE_{it}	0.369*	1					
NI_{it}	0.354	0.143*	1				
L_{it}	- 0.123*	-0.111*	-0.115*	1			
RFA_S_{it}	-0.073	0.064	0.065	-0.052	1		
$AVFS\_S_{it}$	-0.059	-0.034	0.014	0.155*	0.093	1	
$PENA\_S_{it}$	-0.016	0.090	-0.034	-0.052	-0.049	-0.008	1
Variables Used in the Return Model							
	RET_{it}	NI_MC_{it}	L_{it}	RFA_MC_{it}	$AVFS\_MC_{it}$	$PENA\_MC_{it}$	
Panel C: Financial Firm							
RET_{it}	1						
NI_MC_{it}	0.290*	1					
L_{it}	-0.129	-0.410*	1				
RFA_MC_{it}	-0.205*	-0.070	-0.062	1			
$AVFS\_MC_{it}$	-0.068	-0.072*	-0.059	0.070*	1		
$PENA\_MC_{it}$	-0.002	-0.087	0.170*	-0.039*	-0.012	1	
Panel D: Nonfinancial Firm							
RET_{it}	1						
NI_MC_{it}	0.370*	1					
L_{it}	-0.157*	-0.262*	1				
RFA_MC_{it}	-0.161	-0.018	0.078	1			
$AVFS\_MC_{it}$	-0.053	0.021	0.247*	0.070*	1		
$PENA\_MC_{it}$	-0.100	-0.072	0.071	0.062	0.081	1	

Panel A and B: SP_{it} = price per share four-months after the financial year-end; BVE_S_{it} = per share book value of common equity; NI_S_{it}: net income per share; RFA_S_{it} = per share changes in revaluation surplus ; $AVFS\_S_{it}$ = per share changes in gains and losses on re-measuring available-for-sale financial assets; $PENA\_S_{it}$ = per share actuarial gains and losses on defined benefit plans, LNI an indicator variable equal if negative NI and 0 otherwise and *i* and *t* refer to firm and year

Panel C and D: RET_MC_{it} = stock returns (inclusive of dividends) for the year ended four months after the fiscal year end. All other variables ending with MC are earnings scaled by beginning price of equity.

The result of model specification test for incremental value relevance estimations is presented Table 3. Overall, the result of link test demonstrates that the models are well specified. Like in previous studies, the __hat values, which are the predicted value of the models, are significant as expected. Similarly, the _hatsq values are in line with their econometric consideration of insignificant values, demonstrating that the models are well specified. Thus, specifying SP_{it} as a function of the book value of equity, net income, OCI items; and RET_{it} as a function of level and change earnings does not results in an unbiased inference.

Table 4
Test for Model Specification for Regression Estimations

Sample Firms		Financial Firms		Nonfinancial Firms	
Models		_hat	_hatsq	_hat	_hatsq
Model 2	P-value	0.170	0.178	0.042**	0.198
Model 3	P-value	0.036**	0.119	0.298	0.370

Table 5 presents the regression results of the test of H_1 which hypothesised that OCI items provide incremental value relevant information and H_2 that added with a coefficient lower than the traditional net income. Using the sample of financial firms, the coefficient of net income per share and per beginning price of equity were positive 0.50 ($t = 3.17$, $p < 0.002$) and 0.65 ($t = 4.47$, $p < 0.000$) and likewise nonfinancial firms also exhibited positive coefficients of 0.50 ($t = 3.42$, $p < 0.001$) and 0.63 ($t = 4.81$, $p < 0.000$), all significantly better at 1 percent. The incremental value relevance test based on financial and nonfinancial firms indicated that the regression coefficients of RFA_S were positive 0.32 ($t = 3.30$, $p < 0.001$) and 0.60 ($t = 2.54$, $p < 0.012$) and significant at 1 and 5 percent respectively.

When deflated by the beginning price, the coefficients on the RFA_MC were 0.38 ($t = 1.92$ $p < 0.057$) and 0.75 ($t = 1.03$, $p < 0.303$), but only significant at 5 percent for financial firms. These findings demonstrate that fair value gains and losses on the non-current assets scaled by the outstanding shares and the beginning price of equity for the subsample firms were positively priced except for RFA_MC for nonfinancial firms. This result suggests that revaluation of non-current assets reflect value relevant information for equity valuation. This is consistent with previous studies (Barth & Clinch, 1998; Cahan et al., 2000; Chamber et al., 2007; Missonier-Piera, 2007; Hlaing & Pourjalali, 2012).

The argument in the above studies contends that fair value gains and losses on non-current assets are recognised as an important input for firm valuation. This is because revising the carrying amount of non-current assets other than by way of depreciations enable firms to account for changes in the fair value of such assets to reflect the true financial and economic situation. Thus, RFA_S could be employed as valuation input for assessing the market value of a firm. Perhaps, RFA_MC is not significant, suggesting that the variable is less consistent as documented in Barth and Clinch (1998).

Moving to the incremental test of unrealized gains and losses on available-for-sale securities, the coefficient on the AVFS_S for the two subsamples firms were negative based on the values of -0.10 ($t = -2.09$, $p< 0.039$), but statistically significant at 5 percent for financial firms. When deflated by the beginning price, AVFS_MC remains negative considering the value of -0.31 ($t = -2.10$, $p< 0.038$) and -0.61 ($t = -1.95$, $p< 0.053$) both significant at 5 percent. This indicates that investors view re-measuring of available-for-sale securities as bad news hence irrelevant for equity valuation in the Nigerian market. This result is likely because re-measuring available-for-sale securities often used quoted prices in an active market regardless of how erratic the market may be. This result adds to the concerns expressed in the previous studies about the vulnerability of firms with investments in financial assets to fair value accounting in a bearish economy as the case of the Nigerian capital during the study period. This finding lends support to previous studies such as Barth (1999), Mitra and Hossain (2009) and Kubota et al. (2011) that revealed fair value gains and losses on

available-for-sale securities were negatively associated with market value of equities and irrelevant for firm valuation.

Next is the incremental value relevance of actuarial gains and losses. While actuarial gains and losses per share were not statistically significant for financial firms, it was negative (-0.69, t = -1.77, p < 0.077) and significant at 10 percent for nonfinancial firms. On the other hand, the regression coefficients on actuarial gains and losses per beginning market value were positive for the two samples although not significant. The result concerning actuarial gains and losses consistently exhibited positive coefficients except for PENA_S for a sample of nonfinancial firms where it was negatively associated with stock returns. From the investors' view point, this finding does not reflect a good signal and is against valuation theory. This finding does not lend support to previous studies (Mitra & Hossain, 2009; Jones & Smith, 2011).

Thus, because pension adjustments are derived from changes in the fair value of the plan assets and liabilities that move in tandem with market-wide movements, firms are likely to record actuarial losses as reflected in the result documented in this study. Nevertheless, the finding concurs with Dhaliwal et al. (1999). The evidence presented in the fore-going analysis suggests that the value relevance of OCI items for the sample firms is mixed. While fair value gain and losses on non-current assets provide incremental information, fair value of available-for-sale securities and actuarial gains and losses were not positively priced in the Nigerian market. The result of fair value gains and losses on the available for-sale-financial asset for the sample of financial firms was negative, suggesting that the fair value of such assets is value destroying in the Nigerian market. This finding sheds light on the consequences of transitory component of earnings in the valuation process. As Fairfield et al. (1996), Dhaliwal et al. (1999), Bao and Bao (2004) and Kanagaretnam et al. (2009) noted, when earnings are transitory in nature, they exhibit high levels of volatility, which render them less important input for valuation.

Nevertheless, the coefficient of determination (R^2) of the models integrating dirty surplus items seems better than those incorporating either net income or other comprehensive income only. This argument is striking given the lower values of Akaike's Information Criterion (AIC) test and Bayesian Information Criterion (BIC), which indicate that modelling these dirty surplus flows are preferable in explaining valuation metrics compared to net income and aggregate other comprehensive income. This finding lends support to early psychology-based accounting researchers (Hirst & Hopkins, 1998) on the view that disclosure of dirty surplus flows provides important information to investors. At least such practice make several financial performance indicators that can be analysed independently visible to the users. Table 5.20 presents a summary of coefficient of determination for the incremental value relevance tests.

Conclusion

The first objective of this study is to examine whether OCI items provide value relevant information in the Nigerian market. Relating to the valuation implication hypothesised in H_1, this study documents mixed results on the value relevance of OCI items. Using both the price and the return regression, the finding indicates that fair value gains and losses on the non-current assets were positively priced. This evidence demonstrates that revaluation gains and losses on non-current assets represent value relevant information in the Nigerian capital market.

Table 5

Incremental Value Relevance of Net Income and Components of Other Comprehensive Income Using Price and Return Model

		Financial Firms					Non-financial firms			
Variables	Sign	Coef.	Robust Std Error	t	P-Value	VIF	Coef.	Robust Std Error		t
Panel A Price Model										
CONS	+/-	0.2043	0.0460	4.45	0.000***		0.6381	0.2083		3.06
BVE_S_{it}	+	0.3210	0.1020	2.92	0.004***	1.10	0.6617	0.1999		3.31
NI_S_{it}	+	0.5003	0.1581	3.17	0.002***	1.22	0.5027	0.1471		3.42
L_{it}	-	-0.0303	0.0277	-1.09	0.277	1.04	-0.1690	0.1131		-1.49
RFA_S_{it}	+	0.3159	0.0956	3.30	0.001***	1.18	0.5967	0.2346		2.54
$AVFS\_S_{it}$	+	-0.1020	0.0488	-2.09	0.039**	1.02	-0.3815	0.2769		-1.38
$PENA\_S_{it}$	+	0.1184	0.1297	0.91	0.363	1.02	-0.6861	0.3866		-1.77
No. of observations		123					226			
F-value/Mean VIF				5.45	0.000***	1.09				9.06
Adjusted R^2		32.33%					23.99%			
Panel B Return Model										
CONS	+/-	0.1978	0.0511	3.87	0.000***		1.9590	0.1969		9.95
NI_MC_{it}	+	0.6488	0.1453	4.47	0.000***	1.08	0.6281	0.1305		4.81
ΔNI_MC_{it}	+	-0.0232	0.5917	0.04	0.969	1.12	0.6595	0.7935		0.83
L_{it}	-	-0.0107	0.0534	-0.20	0.841	1.23	-0.1317	0.1626		-0.81
RFA_MC_{it}	+	0.3870	0.2014	1.92	0.057*	1.08	0.7517	0.7271		1.03
$AVFS\_MC_{it}$	+	-0.3252	0.1490	-2.10	0.038**	1.07	-0.6070	0.3117		-1.95
$PENA\_MC_{it}$	+	0.1764	0.1220	1.45	0.151	1.08	0.1068	0.5366		0.20
No. of observations		89					152			
F-value/Mean VIF				6.58	0.001***	1.11				8.24
Adjusted R^2		36.73%					19.46%			

Notes: Panel A delineates the price model: BVE_S_{it} = per share book value of common equity; NI_S_{it} = net income per share; RFA in revaluation surplus; $AVFS\_S_{it}$ = per share changes in gains and losses on re-measuring available-for-sale financial assets actuarial gains and losses on defined benefit plans, L_{it} is an indicator terms for loss firms.
Panel B: NI_MC_{it}: net income deflated by the beginning price of equity. Additional suffix "Δ" denotes a change between periods *t*- in revaluation surplus deflated by the beginning price of equity; $AVFS\_MC_{it}$ = changes in gains and losses on re-measuring ava assets deflated by deflated by the beginning price of equity; $PENA\_MC_{it}$ = actuarial gains and losses on defined benefit plans d price of equity; L_t is an indicator term for loss firms and *i* and *t* refer to firm and year. *, **, and ***denotes significance at the respectively.

This finding provides strong support to valuation implication and concurs with previous studies that recognised fair value gains and losses on the non-current assets as an important input for firm valuation (Barth & Clinch, 1998; Cahan et al., 2000; Chamber et al., 2007; Missonier-Piera, 2007; Hlaing & Pourjalali 2012).

Fair value gains and losses on available-for-sale financial securities for both samples were negative and significant for the sample of financial firms. Because re-measuring of available-for-sale financial assets is often based on the quoted prices in an active market, regardless of how erratic the prices are, the value of this asset could easily be affected under unfavourable market conditions. The finding presented herein is in harmony with Barth (1999), Mitra and Hossain (2009) and Kubota et al. (2011) who found fair value gains and losses on available-for-sale financial assets to be value destroying at different times and markets. Also, actuarial gains and losses were consistently positive, but not significant for all estimations. The exception is PENA_S,

which was negatively associated with share price for a sample of nonfinancial firms. Because actuarial gains and losses are derived from changes in the fair value of the plan assets and liabilities, an unfavourable market condition could make firms record additional minimum pension liabilities, which have a negative effect on the firm's valuation (IAASB, 2008). This result is consonant with Dhaliwal et al. (1999).

The second objective of this paper is to examine whether OCI items provide incremental information beyond the traditional net income. Findings revealed that the traditional net income was continuously superior value relevance, only fair value gains and losses on non-current assets reflected value relevant information for the two sub-samples. Thus, fair value gains and losses on available-for-sale financial assets and actuarial gains and losses were not positively priced. Despite their irrelevance, the R^2 of the models incorporating these dirty surpluses appear to be greater than models estimating net income or other comprehensive income (not presented). This evidence supported the theoretical assumption presented in Fairfield et al. (1996), Bao and Bao (2004) and Mechelli and Cimini (2014) of a better explanatory power of price-earnings and return-earnings relationship when using earnings components rather than earnings per share alone. Conclusively, the dominance of net income over OCI items was established and it was supportive of valuation implications posited in H_2.

Because this paper examines something relatively new in Nigeria, the imposed condition of at least one item of OCI item suggests that the study focuses on firms with unequal traditional net income and comprehensive income; hence it is pertinent to recognised sample limitation. Inclusion of more years as data roll in and the market becomes more vibrant may change the results documented herein over time. The importance of OCI items can be gauged by investigating other information dimensions such as persistence and predictive relevance. Future research is recommended to explore these issues in Nigeria.

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