THE VALUE RELEVANCE OF COMPREHENSIVE INCOME REPORTING IN NIGERIA

USMAN ALIYU BABA

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THE VALUE RELEVANCE OF COMPREHENSIVE INCOME REPORTING IN NIGERIA

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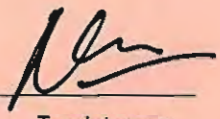

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ABSTRACT

The transition to International Financial Reporting Standards (IFRS) requires Nigerian companies to mark-to-market certain financial assets and liabilities and to recognize holding gains and losses relating to these transactions as items of other comprehensive income. The two main objectives of this study are: 1) to investigate the relative and the incremental value relevance of comprehensive income and its components and 2) to examine the effects of reliability factors on the value relevance of other comprehensive income and its components. Using 349 firm-year observations, the result of Pooled Ordinary Least Square regression indicates the relative value relevance of net income and comprehensive income, but net income dominates comprehensive income. The aggregate other comprehensive income and fair value gains and losses on non-current assets were incrementally value relevant, but with coefficients lower than the traditional net income. These results are consistent for both financial and nonfinancial firms when using the price and the return model. The result on the first test of reliability shows a positive influence of corporate governance mechanisms on investors' pricing of other comprehensive income. The result of the second test of reliability indicates that fair value gains and losses measured based on the quoted prices and observable input are value relevant, but unobservable input was not. However, when level measures were interacted with the corporate governance mechanisms, the impact was more on the unobservable input. Finally, findings regarding compliance with relevant accounting standards suggest low compliance, but compliance enhances the value relevance of the components of other comprehensive income. The results documented, herein, constitute a pioneering role on the relative and the incremental value relevance of comprehensive income reporting in Nigeria. One primary recommendation of the study is that reporting entities should pursue compliance with IFRS standards in order to increase reliability of financial process for investors.

Keywords: comprehensive income, corporate governance, net income, value relevance, Nigeria.

ABSTRAK

Peralihan kepada Piawaian Pelaporan Kewangan Antarabangsa (IFRS) menyebabkan syarikat di Nigeria bukan sahaja perlu menanda beberapa aset dan liabiliti kewangan ke pasaran, malahan syarikat perlu mengiktiraf laba dan rugi pemegangan yang berkaitan dengan proses peralihan ini sebagai item pendapatan komprehensif yang lain. Kajian ini mengandungi dua objektif, iaitu 1) menyelidik nilai relatif dan nilai tambahan yang berkaitan dengan pendapatan komprehensif dan komponennya dan 2) meneliti kesan faktor kebolehpercayaan terhadap kaitan nilai pendapatan komprehensif yang lain. Pemerhatian dilakukan terhadap 349 buah syarikat selama setahun dan dapatan regresi kuasa dua terkecil biasa memperlihatkan adanya kaitan nilai yang relatif pendapatan bersih dan pendapatan komprehensif. Walau bagaimanapun, pendapatan bersih mendominasi pendapatan komprehensif. Agregat pendapatan komprehensif yang lain dan nilai saksama laba dan rugi aset bukan semasa memberikan kaitan nilai tambahan dengan pekali yang lebih rendah berbanding pendapatan bersih yang tradisional. Dapatan ini tekal untuk kedua-dua firma kewangan dan firma bukan kewangan yang menggunakan model harga dan pulangan. Dapatan ujian kebolehpercayaan yang pertama menunjukkan pengaruh yang positif mekanisma urus tadbir korporat terhadap penentuan harga pelabur yang dibuat ke atas pendapatan komprehensif yang lain. Dapatan ujian kebolehpercayaan yang kedua memaparkan nilai saksama laba dan rugi yang diukur berdasarkan harga sebutan dan input yang diperhatikan adalah berkaitan nilai. Namun begitu, apabila urus tadbir dimasukkan, hanya input yang diperhatikan mempunyai kaitan nilai, dan tidak kepada input yang tidak diperhatikan. Impak urus tadbir lebih berat kepada input yang tidak diperhatikan. Akhir sekali, dapatan berhubung pematuhan standard perakaunan yang berkaitan memaparkan pematuhan yang rendah. Tetapi pematuhan ini meningkatkan kaitan nilai komponen pendapatan komprehensif yang lain. Dapatan yang diperoleh ini mengetengahkan peranan kaitan nilai relatif dan nilai tambahan pendapatan komprehensif di Nigeria. Kajian ini menyarankan agar entiti pelaporan mematuhi standard IFRS dan mengamalkan tadbir urus korporat yang baik untuk meningkatkan keyakinan pelabur terhadap kebolehpercayaan maklumat perakaunan.

Kata kunci: pendapatan yang komprehensif, urus tadbir korporat, pendapatan bersih, kaitan nilai, Nigeria.

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LIST OF ABBREVIATIONS

ACEXP	Audit Committee Financial Expertise
ACIND	Audit Committee Independent
ACMET	Audit Committee Meetings
ACSIZE	Audit Committee Size
AIC	Akaike's Information Criterion
AUDR	Auditor’s Reputation
BCGSCORE	Best Corporate Governance Practice
BRC	Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees
CAMA	Company and Allied Matters Act 1990
CI	Comprehensive Income
COMPL	Firms' Level of Compliance with Accounting Requirement
FASB	Financial Accounting Standards Board
FLIB	Foreign Liberalization
FRCN	Financial Reporting Council of Nigeria
IASB	International Accounting Standard Board
ICFR	Internal Control Over financial Reporting
IIA	Institute of Internal Auditors
FDIs	Foreign Direct Investment
IAS	International Accounting Standard
IFRS	International Financial Reporting Standard
NASB	Nigerian Accounting Standard Board
NG-GAAP	Nigerian Generally Accepted Accounting Standard
NI	Net Income
NSE	Nigerian Stock Exchange
NMICW	No Material Internal Control Weakness
PCA	Principal Component Analysis
PCAOB	Public Company Accounting Oversight Board

PUC	Projected Unit Credit (PUC)
PEN	Pension Adjustments
PwC	PricewaterhouseCoopers
PPE	Property, Plant and Equipment
REV	Revaluation of Non-current assets
ROSC	Report on the Observance of Standards and Codes
SAS	Statement of Accounting Standards
SEC	Security and Exchange Commission
SEC	Gains and Losses on Available-for-Sale Marketable Securities
SFAS	Statement of Financial Accounting Standard
SME"s	Small and Medium Enterprise
SMEGA	Small and Medium-sized Entities Guidelines
UNCTAD	United Nations Conference on Trade and Development
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presents the background of the study, which highlights the importance of accounting information on the valuation of business concern. The chapter also discusses the practical issues in financial reporting as they affect the reliability of reported accounting numbers to which investors turn. This is followed by the problem statement, the research objectives, scope of the study, significance of the study and the organization of the thesis.

1.1 Background of the Study

The extensive use of accounting information for valuation purposes underscores the importance of value relevance research (Beaver, 2002). On the wave of this interest, three interrelated issues regarding the value relevance of net income and comprehensive income[1] dominate the discussion of the accounting standard-setting bodies and contemporary researchers (Kanagaretnam, Mathieu, & Shehata, 2009; Mechelli & Cimini, 2014). The first issue is whether the periodic financial position and performance of a firm can be measured using historical-costs or fair value convention. The second issue of concern concerns about whether the value added to the owners' equity during the reporting period should be assessed using current operating performances or an all-inclusive income approach. The third critical issue relates to the disclosure location of the

[1] Net income is a bottom line earnings that measures the amount a firm earned during a period, typically quarterly or yearly (Subramanyam, 2014). Comprehensive income on the other hand is net income adjusted for other comprehensive income items (Kanagaretnam et al., 2009; Mechelli & Cimini, 2014).

changes in the wealth of the owner (clean surplus or dirty surplus)[2]. Important to this argument, Wang et al. (2006) opined that the isolation of relevant dirty surplus flows from the financial statement could weaken the informativeness of accounting earnings.

Presumably, when value relevant information eluded disclosure on the face of the primary financial statement, such may hinder the investors' ability to find and integrate significant events in a precise and timely manner (Hirst & Hopkins, 1998; O'Hanlon & Pope, 1999; Cahan, Courtenay, Gronewoller, & Upton, 2000; Lee & Park, 2013). Recognizing the users' supremacy, measurement enrichment (comprehensive income), which captures all sources of value creation and distinguishes between value creation and value distribution, should be more appropriate for equity valuation. This benefit grew the demand for a statement of comprehensive income, which integrates in one or a separate statement the net income adjusted for dirty surplus flows[3]. This prerogative motivates the joint project of the Financial Accounting Standards Board (FASB) and International Accounting Standard Board (IASB) on comprehensive income reporting. These proposals are based on the assumption that financial statements prepared using an inclusive approach reveal the true underlying earnings power of a company and provide capital markets participants with more relevant financial performance measures (Kanagaretnam et al., 2009; Mechelli & Cimini, 2014).

[2] The clean surplus approach (current operating performance) argued that temporary changes (dirty surplus) in the value of a firm arising from non-core operations should bypass the income statement and be recorded directly into owners' equity because they are less persistent to avoid earnings volatility.

[3] Supporters of the dirty surplus approach (all-inclusive view) contend that all changes in the value of assets and liabilities measured at their market value should pass through the income statement. By so doing, net income is adjusted for all changes in the economic value of a business entity resulting from all its operations. Thus, net income would retain its role as a significant input for valuation. This would increase the clarity of information about economic entities to aid users' decisions making and resolve alternative choices (IASB, 2010).

As an upshot to these measurements and disclosure issues, several studies have examined the information contents of a comprehensive income statement using relative and incremental value relevance research design[4]. Dominant in the literature are studies from developed countries such as the United States, the United Kingdom, Australia and New Zealand. These studies include Dhaliwal, Subramanyam, and Trezevant (1999), Cahan et al. (2000), Biddle and Choi (2006), Chambers, Linsmeier, Shakespeare, and Sougiannis (2007), Jones and Smith (2011), Kanagaretnam et al. (2009), Lee and Park (2013), Mechelli and Cimini (2014), Firescu (2015) and Marchinia and D'Este (2015). These studies have found net income, comprehensive income and its components to be value relevant. Nonetheless, the question of which is more informative to investors is still far from being adequately addressed.

Undoubtedly, the Nigerian reporting environment has many differences with those of the United States, the United Kingdom and other well-established markets. Thus, results from those markets do not necessarily generalise to the Nigerian setting considering their maturity, development in financial reporting and corporate governance practices (Enofe, Asiriuwa, & Ashafoke, 2014). Notably, the accounting systems of developed economies like the United States and the United Kingdom had always kept pace with the changing needs of businesses. Nigerian Statements of Accounting Standards (SAS), which is referred to as NG-GAAP (IAS version adopted since 1984), remained the same until 31 December 2011 when it was replaced by IFRS standards (Report on the Observance of

[4] Relative association studies have compared the association between the market value of equities and alternative financial performance indicators (net income and the comprehensive income). On the other hand, incremental value relevance studies, investigate whether other comprehensive income or its components are more value relevant than net income.

Standards and Codes [ROSC], 2011). Prior to 2012, no regulation mandated the presentation of a comprehensive income statement. Thus, presentation of other comprehensive income items such as unrealized gains and losses on available-for-sale marketable securities, gains and losses on non-current assets, changes in the balances of cumulative foreign currency translations and adjustment to pension reserves were not required prior to 2012. Unlike the IFRS framework, non-disclosure of these earnings may suggest an increased propensity of losing vital information and cases of potential earnings management (Nigerian Accounting Standards Board [NASB], 2010; ROSC, 2011).

In Nigeria, the Cadbury Nigeria Plc scandal of 2006 involving a deliberate overstatement of its financial position to the tune of between US$83.33 million and US$96.15 million is a good reference point (Ajayi, 2006). Other well-publicized fraudulent financial reporting in Nigeria has included the Lever Brothers Plc, Wema Bank, and the then Afribank Plc, Finbank and Springbank (Ajayi, 2006; Adeyemi & Fagbemi, 2010; Okaro, Okafor, & Ofoegbu, 2013). Similarly, the Nigerian Security and Exchange Commission, which is the apex regulator of the Nigeria Stock Exchange (NSE) publicly made it known that security prices and accounting numbers had been manipulated (Olisaemeka, 2009; Osaze, 2011). These eventually worsened[5] the value of securities due to the perceived information asymmetry and consequently threatened the reliability of accounting numbers.

[5] The downward pressure on the market value of equities in the Nigerian Stock Exchange market has been blamed partly on financial statement fraud (Osaze, 2011).

Due to the inefficiencies highlighted above, NSE market capitalization nosedived dramatically between 2008 to the end of 2013 (Olisaemeka, 2009; Ejiogu, 2012; Nwachukwu, 2014) as presented in Figure 1.1. The market capitalization declined from US$8.65 billion in 2008 to US$2.95 billion in 2009. A slow movement was observed from 2010 (US$5.07 billion) to 2011 (US$4.19 billion) and again to US$5.75 billion in 2012.

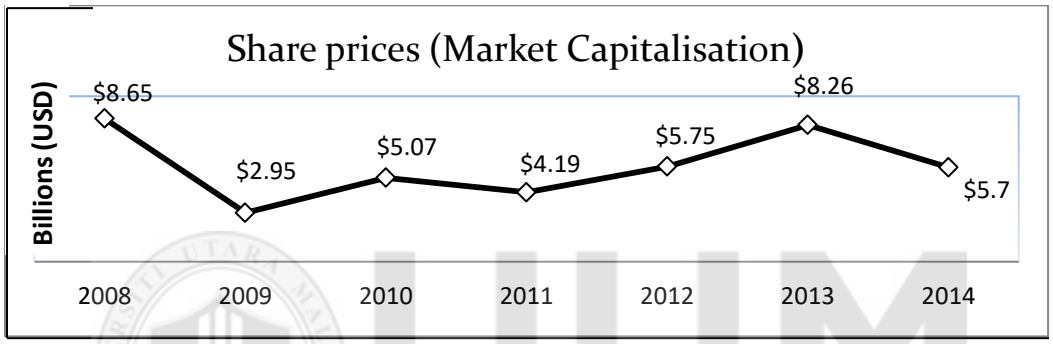

Figure 1.1
Graphical Presentation of Market Capitalization of NSE Market (2008-2014).

A remarkable improvement was observed based on an increasing rise in the market capitalization from US$5.75 billion to the high of US$8.26 billion in 2013 (NSE, 2013; Nwachukwu, 2014). Again, investors in the NSE market lost 24.4 percent on equities as the market capitalization declined to US$5.7 billion by the end of December 2014 (Egwuatu, 2014). Proportionately, as presented in Figure 1.2, these fluctuations affect all share index and stock returns negatively (Olisaemeka, 2009; Egwuatu, 2014).

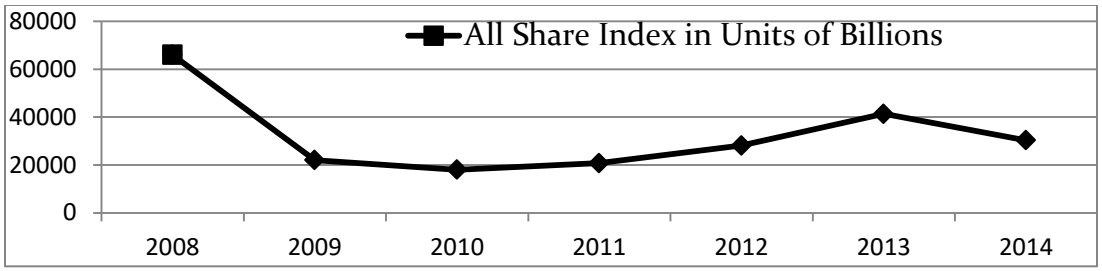

Figure 1.2
Graphical Presentation of Share Price Index of NSE Market (2008-2014).

Between 2007 and 2009, the inflow of Foreign Direct Investment (FDIs) declined from a high of US$6.9 billion to US$3.94 billion (NASB, 2010). Clement (2014) posited that FDIs to Nigeria fell from a high of US$8.92 billion in 2011 to US$4.91 billion in 2013. Specifically, NASB (2010) documented that limited financial reporting and disclosures made by reporting entities have portrayed Nigeria as a risky country for the flow of Foreign Direct Investments This is so because some entities do not "provide investors with sufficient economic information that will enable them to understand their risk profiles to permit informed judgments and decisions" (NASB, 2010, p.8). Therefore, the abysmal performances of the key indicators of the Nigerian market was partly attributed to the loopholes in the financial reporting process, weak corporate governance practices and, in extreme cases, the absence of relevant standards for some accounting transactions (NASB, 2010; Osaze, 2011; ROSC, 2011; Okaro et al., 2013; Sanusi & Izedonmi, 2014).

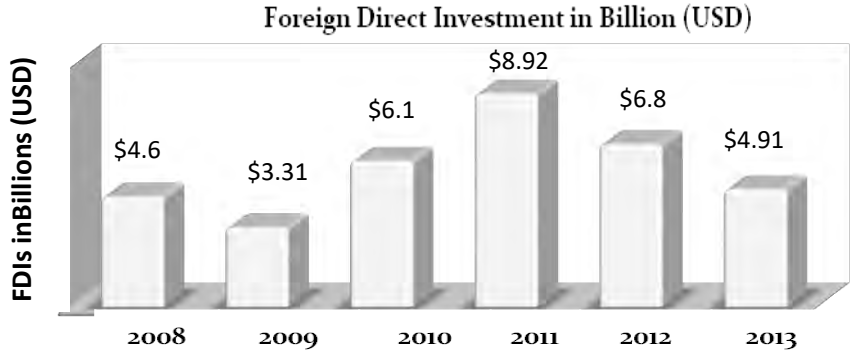

Figure 1.3
Graphical Presentation of Foreign Direct Investment into the NSE Market (2008-2013).

Because the Nigerian market is increasingly becoming more sophisticated, the government saw the need to enact market-oriented economic policy reforms to ameliorate inefficiencies in the financial reporting practices and corporate governance framework (NASB, 2010; ROSC. 2011). One fundamental change towards addressing financial reporting challenges in the NSE market was the transition to IFRS in 2012 to align with international accounting standard (NASB, 2010). The transition to IFRS provided different accounting requirements for the Nigerian reporting entities (Isa, 2014)[6]. One major area of difference between the two frameworks is the presentation of a comprehensive income statement, which was not a requirement under the NG-GAAP.

[6]As discussed in later chapters, substantial difference between exists IFRS and NG-GAAP in terms of financial statement presentation and measurements of accounting transaction (PwC, 2011). The adoption of IFRS has necessitated an accounting standard change for most Nigerian companies. This change entailed a shift toward more valuation of assets by emphasizing fair value measurement instead of historical cost convention (NASB, 2010).

With an effective date of 2012, Nigerian reporting firms were mandated to mark-to-market or mark-to-model[7] certain financial assets and liabilities such as the determination of the present value of non-current assets, available-for-sale marketable securities and defined benefit plan (PwC, 2011). The effect of these adjustment is made visible on the face of a primary financial statement. Presumably, mandatory presentation of comprehensive income in Nigeria apparently represents an increase in disclosure level and could mean enhance transparency and comparability in the financial reporting process (PricewaterhouseCoopers (PwC), 2011).

However, a long-standing debate among international accounting scholars and standards setters is the trade-off between relevance and reliability. In this line of thinking, researchers have cast doubts on whether fair value accounting will lead to transparent financial reporting, particularly when valuation models are used (Kanagaretnam et al., 2009; Lee & Park, 2013; Siekkinen, 2016). The main thrust here is that, when an active market for fair value assets and liabilities does not exist, fair value is derived based on the assumptions and estimations of managers (Song, Thomas, & Yi, 2010; Lee & Park, 2013; Goh, Ng, & Yong, 2015; Siekkinen, 2016). As fair value inputs become less observable to the investors, they are viewed as being less reliable (Maines & McDaniel, 2000; Song et al., 2010; Lee & Park, 2013, Siekkinen, 2016).

[7] Mark-to-market or mark-to-model denote the quality of the input factors used in the measurement of fair value assets and liabilities. Mark-to-market is any measurement based on inputs of the first level of fair value hierarchy (quoted prices), whereas mark-to-model are fair value measurement based on inputs of lower levels suh as observable and unobservable input that often require valuation techniques. Changes to these levels are derived by interest rates, exchange rates, and other random walk processes.

Thus, the potential use of manager's discretion in the fair value determination often induces information asymmetry in financial reporting process, which leads to agency costs that could threaten the reliability of fair value earnings (Maines & McDaniel, 2000; Song et al., 2010; Lee & Park, 2013). Nevertheless, several studies have provided good arguments that the strength of corporate governance practices (Habib & Azim, 2008; Bhat, 2009; Song et al., 2010; Lopes & Walker, 2012; Lee & Park, 2013), fair value hierarchy levels (Song et al., 2010; Lee & Park, 2013; Lu & Mande, 2014) and level of compliance (Bushee & Leuz, 2005; Kang & Pang, 2005; Hodgdon, Tondkar, Harless, & Adhikari, 2008; Hassan et al., 2009) effectively mitigate the reliability concern associated with reporting of other comprehensive income and its components. Thus, assessing the effect of these reliability factors (corporate governance practices, fair value hierarchy and firm's compliance with accounting standards)[8] on the value relevance of other comprehensive income and its components provides a better approach for extending the discussion of fair value earnings.

To strengthen these reliability factors in Nigeria, a concerted effort was initiated in 2008 through the Nigerian SEC to review the 2003 code of corporate governance due to ineffectiveness observed in addressing corporate reporting challenges. This innovation was essential due to consensus among stakeholders that weak corporate governance has been responsible for some recent corporate failures in Nigeria (SEC, 2011). As part of an arrangement for the adoption of IFRS, the federal government through the SEC issued a revised code of corporate governance in 2011 to check corporate reporting challenges

[8] In the extent literature, corporate governance practices, fair value hierarchy levels and firm's compliance with accounting standards have individually been associated with the reliability of accounting earnings. Thus, in this study, these variables are labelled as reliability factors for convenience.

(Adegbite, 2012). This new code of corporate governance will ensure the "highest standards of transparency, accountability and good corporate governance, without unduly inhibiting enterprise and innovation", and aligning with international best practices (SEC, 2011, p. 1).

Therefore, the limited accounting disclosure, weak corporate governance practices and low perceived reliability of accounting information in the NSE market and subsequent development in reporting and governance frameworks motivated this study. Upon the transition from the NG-GAAP to IFRS, the expectation has been that IAS/IFRS accounting standards would lead to higher quality earnings such as information content of comprehensive income. Thus, a need exists to provide empirical evidence on the relative and the incremental value relevance of other comprehensive income and its components in Nigeria. Because the 2011 corporate governance framework emphasised high level governance practices, increase accounting disclosure and enhance audit process, this study is tailored towards exploring the influence of reliability factors on the value relevance of other comprehensive income and its components. This approach will contribute to a well-recognised argument about the source and measurement of accounting numbers (Lee, 2001; Holthausen & Watts, 2001; Aboody et al., 2002; Braam & Beest, 2013).

1.2 Problem Statements

Recognizing the importance of comprehensive income and its components as financial performance indicators, the IASB and FASB require firms to present comprehensive

income as a primary financial statement (Kanagaretnam et al., 2009; Jones & Smith, 2011; Lee & Park, 2013). The motivation for this proclamation is to increase the level of disclosure, reduce the propensity for losing vital information and to enhance the transparency in the financial reporting process (Kanagaretnam et al., 2009; Jones & Smith, 2011; Lee & Park, 2013). Sequel to these pronouncements, several studies have examined the information content of comprehensive income statement for different jurisdictions and time using different research design.

Empirically, the relative and incremental value relevance of comprehensive income and its components has been examined in different countries with mixed results about which earnings is more value relevant to investors (Dhaliwal et al., 1999; O'Hanlon & Pope, 1999; Cahan et al., 2000; Biddle & Choi, 2006; Chambers et al., 2007; Kanagaretnam et al., 2009; Jones & Smith, 2011; Lee & Park, 2013; Mechelli & Cimini, 2014; Firescu, 2015; Marchinia & D'Este, 2015)[9]. Closely related study in Nigerian only investigates the relative value relevance of book value, net income and dividends (Abiodun, 2012; Olugbenga & Atanda, 2014; Ernest & Oscar, 2014; Enofe et al., 2014). One possible reason could be that, prior to 2012, presenting a comprehensive income type statement was not enforced by the NG-GAAP (PwC, 2011). To fill the gap, this study examines the relative and the incremental value relevance of comprehensive income and its components in the NSE market.

[9]For instance, the results of Dhaliwal et al. (1999), O'Hanlon and Pope (1999), Cahan et al. (2000) and Mechelli and Cimini (2014) favoured the dominance of net income over comprehensive income. By contrast, Biddle and Choi (2006) and Kanagaretnam et al. (2009) claimed that comprehensive income is more strongly associated with stock price and returns as compared to the traditional net income.

Furthermore, stock exchanges around the world have required companies to file annual reports within a certain period as stipulated by relevant authorities. However, whether the financial statement provided to market participants is a "faithful representation of economic phenomena" is another question that has attracted extensive debates (Fields, Lys, & Vincent, 2001; Maines & Wahlen, 2006; Song et al., 2010). Because other comprehensive income usually includes numerous "mark-to-market or mark-to-model" types of adjustments, a trade-off between relevance and reliability is likely (Song et al., 2010; Christensen, Glover, & Wood, 2012; Lee & Park, 2013). This submission does not undermine managers use of discretion to credibly report fair value information (Barth et al. 1998; Lopes & Walker, 2012; Lee & Park, 2013). However, prior findings suggest that managers may have the motivation to misrepresent fair value inputs for personal benefits (Bartov, Mohanram, & Nissim, 2007). The later 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).

Based on the above reasoning, a general perception of the likelihood of measurement errors and intentional manipulation exists when using discretion to determine the economic value of other comprehensive income items (Song et al., 2010; PCAOB, 2011; Christensen et al., 2012; Lee & Park, 2013). 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 et al., 1999; Song et al., 2010; Lee & Park, 2013). These problems are expected to become more

severe as fair value inputs become less observable by investors. Interestingly, these challenges are often minimized through effective corporate governance mechanisms (Bartov et al., 2007; Song et al., 2010; Lee & Park, 2013), fair value hierarchy (Song et al., 2010; Lu & Mande, 2014) and compliance with disclosure requirements of a given accounting standards (Hassan et al., 2009; Tsalavoutas, 2009).

Specifically, corporate governance mechanisms[10] through their oversight function, could provide a disciplinary measure for measurement challenges associated with other comprehensive income items. This could suggest reduced managerial discretion in the determination of fair value of assets and liabilities particularly for mark-to-model inputs (Bhat, 2009; Song et al., 2010; Lopes & Walker, 2012; Lee & Park, 2013). By way of monitoring, elements of corporate governance such as audit committee effectiveness, effective internal control systems and external auditors' involvement would jointly and individually enhance the quality, integrity and reliability of the financial reporting process (Ismail & Chandler, 2005; DeFond, 2010; Song et al., 2010; Yasin & Nelson, 2012; Woidtke & Yeh, 2013; Lee & Park, 2013). In this sense, this study examines whether or not the strength of corporate governance mechanisms influences the reliability of other comprehensive income in the NSE market.

Similarly, disclosure of information on fair value hierarchy has also been associated with the reliability of accounting information. The criticism against fair value accounting is its proneness to management estimation errors and intentional manipulation henc leading to

[10] Corporate governance mechanisms in this study is a factor score comprising audit committee independence, audit committee financial expertise, the frequency of annual audit committee meeting, audit committee size, auditor's reputation and disclosure of no material internal control weaknesses.

less important to investors (Landsman, 2007; Penman, 2007). These challenges induce information asymmetry between managers and investors and adversely affect the reliability of fair value earnings, especially for highly subjective input (Landsman, 2007; Penman, 2007; Song et al., 2010; Lee & Park, 2013). However, Song et al. (2010) and Lee and Park (2013) posited that fair value hierarchy (Level 1 to Level 3)[11] could be used as a direct test of reliability of fair value earnings. This is based on the assumption that when investors perceived subjectivity in the fair value determination to be greater, they attach low weight for such fair value measures (Penman, 2007; Song et al., 2010; Lee & Park, 2013). This suggests that fair value gains and losses at Level 3 (less reliable) are more likely to be discounted by investors in the valuation process.

Thus, using fair value hierarchy levels as a proxy for reliability, Song et al. (2010) and Lu and Mande (2014) partitioned samples of the quarterly reports of firms in the United States with fair value gains and losses on financial assets and liabilities into Level 1 to Level 3[12]. In a related study, Lee and Park (2013) classified fair value gains and losses into a less subjective component (available-for-sale marketable securities) and more subjective component (fair value change on the defined benefit plan, foreign currency translation and a change in derivative instrument). Nonetheless, because some financial assets could be measured using Level 2 and perhaps Level 3, partitioning other comprehensive income items based on the perceived degree of management subjectivity does not reflect the actual sense of reporting. It is therefore essential to extend Song et al.

[11] Fair value is categorized into different levels of the fair value hierarchy among Level 1 (quoted prices in active markets), Level 2 (observable input) and Level 3 (unobservable input).

[12] The value relevance of fair values based on Level 1 and Level 2 is greater than the value relevance of Level 3 fair values. More over, the impact of corporate governance practice is more for Level 3 measurement.

(2010) and Lu and Mande (2014) on the effect of fair value hierarchy levels for multiple components of other comprehensive income. This study investigates the reliability of fair value gains and losses of available-for-sale marketable securities, revaluation of non-current assets and actuarial gains and losses based on the hierarchy of which they are disclosed and how they are influenced by corporate governance practices.

Again, compliance with accounting requirements, which reinforces concerns about the reliability of accounting information has remained a controversial issue in many reporting environments. Perhaps, the reluctance of firms to observe full compliance suggests violations in terms of disclosure requirement of relevant standards (Hassan et al., 2009; Mısırlıoğlu, Tucker, & Yükseltürk, 2013). This could exacerbate agency costs and hence threaten the reliability of accounting information (Hassan et al., 2009; Braam & Beest, 2013). Thus, the omission of compliance while investigating IFRS adoption may lead researchers to draw incorrect conclusions, especially if noncompliance is widespread (Hodgdon et al., 2008; Mısırlıoğlu et al., 2013)[13].

The above argument is important given the dearth of empirical evidence linking the level of mandatory disclosures and firm value in developing economies (Bushee & Leuz, 2005; Kang & Pang, 2005; Hassan et al., 2009; Tsalavoutas, 2009). With an emphasis on less developed markets, Verrecchia (2001) and Leuz and Wysocki (2008) call for future research that would investigate compliance with mandatory adoption of IFRS. This study

[13] Because companies differ in terms of electing accounting principle when re-measuring fair value of assets and liabilities, financial statement users are most likely to attach different weights to different levels of compliance (Hodgdon et al., 2008).

addresses this call for further research by investigating the value relevance of compliance with IAS 16 (Revaluation of Property, Plant and Equipment), IAS 19 (Employee Benefits) and IFRS 7 (Financial instruments: Disclosures) and their effects on the components of comprehensive income in the Nigerian market.

Summarily, based on the suggested and promising research opportunities identified, the present study explores four different dimensions regarding the information content of comprehensive income. First, the study contributes to and extends the accounting literature by adding the Nigerian perspective to the on-going debate on the relative value relevance of net income and comprehensive income. Second, the study examines the incremental value relevance of other comprehensive income and its components. Third, it investigates the effect of corporate governance mechanisms on the value relevance of other comprehensive income. Fourth, the study examines the direct reliability of fair value hierarchy of the components of other comprehensive income and the influence of corporate governance on fair value hierarchy. Fifth, it investigates the influence of firms' compliance with IAS 16, IAS 19 and IFRS 7 mandatory disclosure on the components of other comprehensive income. Accordingly, evidence about these reliability factors has the advantage of demonstrating the role of non-financial information in equity valuation. To address these issues, the following research questions and objectives are set for the study.

1.3 Research Questions

From the context of Nigerian capital market, this study intends to address the following research questions.

1. Is traditional net income more value relevant than the comprehensive income?
2. Do other comprehensive income and its components provide incremental information beyond the traditional net income?
3. Does corporate governance influence the value relevance of other comprehensive income?
4. Does the reliability of fair values decrease when the fair value hierarchy descends from Level 1 towards Level 3 and does corporate governance matter?
5. Does the level of compliance with IAS 16, IAS 19 and IFRS 7 influence the value relevance of components of other comprehensive income?

1.4 Research Objectives

To answer the above research questions, this study proposes to achieve these research objectives in the NSE market:

1. To examine whether the traditional net income is more value relevant than omprehensive income;
2. To assess whether other comprehensive income and its components provide incremental information beyond the traditional net income;
3. To determine the influence of corporate governance on the value relevance of other comprehensive income;

4. To examine whether the reliability of fair values decreases when fair value hierarchy descends from Level 1 towards Level 3 and whether corporate governance matters; and

5. To investigate the influence of compliance with IAS 16, IAS 19 and IFRS 7 on the value relevance of the components of other comprehensive income.

It is worthy of note that test of value relevance difference of comprehensive income and other comprehensive income between voluntary and mandatory comprehensive income reporting regimes is a silent issue imbedded in objectives 1 and 2.

1.5 Scope of the Research

This study investigates the value relevance of comprehensive income reporting in Nigeria. Specifically, this study investigates 117 financial and nonfinancial firms listed in the NSE market for the period of 2010 to 2014. Even though IFRS was officially adopted in 2012, the need to integrate the banking system into the global best practices in financial reporting and disclosure motivated the Central Bank of Nigeria (CBN) to commence a partial adoption of the IFRS in 2010. This was intended to enhance market discipline and reduce uncertainties in financial reporting process. Because firms in other sectors may mimic financial firms in adopting IFRS based financial reporting before 2012, it is possible to observe voluntary disclosure of other comprehensive income ealiar than 2012. These entities are critical to the development of the Nigerian economy, as such the relevance and reliability of their accounting numbers are needed more than ever

to restore investors lost confidence in the NSE market. To demonstrate the value relevance of accounting amounts of the sample firms, this study investigates the relative value relevance of net income and comprehensive income using modified Ohlson's (1995) price model and Easton and Harris's (1991) return model.

Moreover, this study investigates the incremental value relevance of other comprehensive income and its components. Data on the components of other comprehensive income are generally limited and data on foreign currency translation adjustments and cash flow hedge were almost unavailable for the sampled firms. Specifically, this study focused on fair value gains and losses on revaluation of non-current assets, fair value gains and losses on available-for-sale financial assets and actuarial gains and losses on defined benefit plans due to data availability for the study period. Like in the relative value tests, the Ohlson (1995) price model and the Easton and Harris (1991) return model are employed for all incremental value relevance tests. The test of value relevance difference of comprehensive income and other comprehensive income between voluntary and mandatory comprehensive income reporting regimes was based on sample partitioned into 2010 to 2011 (voluntary regime) and 2013 to 2014 (mandatory regime).

Following the comments of previous studies on the proneness of fair value earnings to measurement errors and intentional manipulation (Song et al., 2010; Christensen et al., 2012; Lee & Park, 2013), this study investigates effects of reliability factors on the value relevance of fair value earnings. Reliability factors have three perspectives. First is corporate governance mechanisms, a factor score of six corporate governance variables

(audit committee independence, audit committee financial expertise, the frequency of annual audit committee meeting, audit committee size, auditor's reputation and disclosure of no any material internal control weakness). These corporate governance elements are chosen because they are more representative of audit functions and have evolved considerably over the past decade in explaining the quality and integrity of accounting information.

Second is the fair value hierarchy, which is based on the classification of other comprehensive income items into Level 1 to Level 3 for measurements based on quoted prices, observable inputs and unobservable input as IFRS 7 stipulated. Third is the level of compliance with IAS 16 (Revaluation of Property, Plant and Equipment), IAS 19 (Employee Benefits) and IFRS 7 (Financial instruments: Disclosures). The value relevance of these standards was examined and their effects on the components of other comprehensive income.

1.6 Significance of the Study

The framework used in this study is essential for assessing the quality of comprehensive income and its components. Thus, this study is unique for the following reasons. First, the study investigates the relative and the incremental value relevance of the traditional net income and the comprehensive income in the Nigerian market. The information content of comprehensive income has been vigorously researched. However, as Kanagaretnam et al. (2009) and Fasan, Fiori, and Venice (2014) recommended, this study makes contextual contributions by adding Nigerian evidence to the on-going debate on the

usefulness of comprehensive income reporting. By examining fair value earnings (comprehensive income and its components), this study extends previous studies in the NSE market that employed the book value of equity, earnings per share and cash flow from operation (Mgbame & Ikhatua, 2013; Olugbenga & Atanda, 2014; Enofe et al., 2014; Ernest & Oscar, 2014).

Second, because other comprehensive income comprised different fair value items that are measure using different measurement inputs, it is possible that the impact of corporate governance mechanism as a test of reliability will reflect upon the value relevance of other comprehensive income. Thus, by examining the influence of individual and factor scores of corporate governance variables, as they limit the potential information asymmetry associated with other comprehensive income, this study expands understanding about the role of corporate governance mechanisms on the reliability of fair value earnings from the Nigerian perspective.

Third, this study documents evidence of direct tests of reliability of fair value of the components of other comprehensive income. Previously, Song et al., (2010), Lu and Mande (2014), Goh et al. (2015) and Siekkinen (2016) utilised quarterly data on financial instrument assets and liabilities for financial firms. Lee and Park's (2010) classification was based on the perceived degree of subjectivity of items of comprehensive income. This study extends these studies by classifying fair value gains and losses on non-current assets, gains and losses on available-for-sale marketable securities and actuarial gains and losses into fair value hierarchy levels. In the light of the above, this thesis provides some

initial evidence on the direct test of reliability of multiple fair value gains and losses when classified by hierarchy, and that fair value hierarchy is influenced by the strength of corporate governance mechanisms.

Fourth, prior to 2012, reporting comprehensive income was voluntary. Considering management subjectivity in the fair value measurements of other comprehensive income items, compliance with relevant accounting requirement becomes essential in assessing the reliability of other comprehensive income items. Evidence in the literature indicates that a high level of compliance reduces information asymmetry, minimises agency cost of financial reporting and increases accounting information quality (Hodgdon et al., 2008; Hussainey & Walker, 2009). This study showed that disclosure relating to IAS 16, IAS 19 and IFRS 7 are value relevant and have a positive influence on the value relevance of other comprehensive income items in the NSE.

Thus, this study significantly enhances value relevance literature on comprehensive income reporting and has responded to recent calls in the literature for more in-depth single country studies (Habib, 2008; Barth et al., 2012; Fasan et al., 2014) and IFRS adoption (Barth et al., 2008; Kanagaretnam et al., 2009; Rad & Embong, 2013). The findings of this study are of great importance for academics, because they shed some light on the under-studied issue of fair value earnings in the Nigerian market. Overall, findings documented in this study will promote benchmarking among companies by setting high best practices in financial reporting and disclosure to enhance market discipline and reduce uncertainties of fair value earnings.

Practically, this study is also important to policy makers, as they may be interested in knowing what the effect is of the regulations such as the revised corporate governance code in 2011 and the adoption of IFRS in 2012 on the relevance and reliability of accounting numbers. Findings on the effect of reliability factors provide a basis for firms for the need to align with global best practices. Given that other comprehensive income and its components typically utilised fair-value application, the findings regarding the reliability factors imply that, investors can assess whether firms provide sufficient economic information for understanding their risk profiles for making informed judgments and decisions. Because the findings of this study portray only a limited scope of fair-value three years after mandatory reporting of comprehensive income and few corporate governance variables, future research may provide additional insights extending the scope of this study as more data roll in and including more corporate governance as well as institutional variables.

1.7 Organization of the Thesis

As discussed in the previous sections, this chapter introduces the thesis by providing the background/motivation for relative and incremental value relevance. One distinctive characteristic of this chapter is that significant issues relating to reliability factors discussed in the previous literature and theoretical underpinnings are presented along the financial performance indicators. The rest of the thesis is structured as follows.

Chapter Two delineates an overview of the Nigerian capital market and the framework of the financial reporting regulation in Nigerian. The chapter highlights the areas of

similarities and differences in disclosure requirements between NG-GAAP and IFRS. The chapter also presents selected empirical studies of different streams of literature such as value relevance of earnings components, corporate governance practices, fair value hierarchy information and compliance related literature.

Chapter Three presents the theoretical background. The chapter discusses the underpinning theory (valuation theory) and supporting theory (agency theory). Finally, the chapter presents the hypotheses development and the research framework. Chapter Four focuses on the proposed methods in achieving the research objectives. Specifically, the chapter provides a detailed explanation of the proposed research design, population, sample, variable measurement, data collection procedure and methods of analysis.

Chapter Five and Six are devoted to the presentation of findings and discussions based on the two main issues addressed in this thesis respectively. Chapter Five discusses the findings and analyses of the relative value relevance of net income and comprehensive income as well as the incremental value relevance of net income and other comprehensive income items. Chapter Six presents the results of the effects of reliability factors (corporate governance mechanism, fair value hierarchy and level of compliance) on investors pricing of other comprehensive income and its components.

Finally, Chapter Seven presents the concluding remarks on the relative and the incremental value relevance of comprehensive income; and the effect of reliability factors on the value relevance of other comprehensive income and its components. In Chapter

Seven, a summary of the research findings and their implications are presented first. Then, a summary of the contributions and limitations of the study follows. On the final note, opportunities for further research are highlighted.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter is divided into six main sections. The first section presents an overview of the Nigerian financial reporting regulations, the NSE market and transition from NG-GAAP to IFRS. Concepts of value relevance and market values proxies (share price and return) are discussed in the second section. The empirical literature on the value relevance of net income, comprehensive income and its components are discussed in the third section. The fourth section presents literature on the influence of corporate governance mechanisms, fair value hierarchy information and the level of compliance as a means of assessing reliability of accounting numbers. To control for firm-specific characteristics, corporate characteristics such as firm size, leverage, industry and foreign liberalization are discussed in the fifth section as control variables. Finally, the last section presents the summary of the chapter.

2.1 General Overview of Financial Reporting Regulations and Capital Market in Nigeria

This section provides the background information of the NSE market, financial reporting regulations and the transition to IFRS in Nigeria.

2.1.1 Financial Reporting Regulation in Nigeria

Regulation of accounting information in every financial reporting environment addresses concerns that users of financial statements should receive a minimum amount of information that can be described as relevant and reliable to make rational economic decisions regarding their investments (FASB, 2010). In every reporting environment, the preparation and presentation of financial statements by reporting entities usually follows certain rules and principles as prescribed by statutory bodies. In most parts of the world, statutory agencies are the bodies responsible for regulating the reporting processes.

In Nigeria, statutory bodies such as the Financial Reporting Council of Nigeria (FRCN) previously known as the Nigerian Accounting Standard Board (NASB), the Security and Exchange Commission (SEC) and the Nigerian Stock Exchange (NSE) are responsible for the regulation of accounting practices. Financial reporting rules are stated in the Company and Allied Matters Act (CAMA) 1990 as amended 2004. The Act prescribes the format, contents and auditing requirements of financial statements. Before the adoption of IFRS, the Act required that financial reports should comply with the Statement of Accounting Standards (SAS-NG-GAAP) issued by the Nigerian Accounting Standards Board (NASB). Hitherto, these concepts and principles were the foundations upon which financial reporting practices (preparation and presentation) among Nigerian companies were aligned.

Nonetheless, in Nigeria, the audit and accounting profession is relatively young and weak (ROSC, 2011). Creative accounting is a common practice and enforcement of accounting regulations is also very weak (Ajayi, 2006; NASB, 2010; ROSC, 2011). In fact, ROSC

(2011) and Okaro et al. (2013) categorized Nigeria's financial reporting as been filled with prevalent cases of earnings management. In turn, earnings management has generated a low level of trust for the published accounting numbers (Ajayi, 2006; ROSC, 2011; Okaro et al., 2013). Arguably, the adoption of IFRS may not necessarily lead to a more transparent reporting system, if the standards fail to report adequately the economic position and performance of a firm. Again, because the adoption of IFRS is more than just an accounting exercise, detriment to quality may also arise if corporate reporting and governance frameworks are not sufficiently robust. As such, other conversion efforts include government engagement in wide-ranging reviews that are capable of reassuring the markets and the public at large that corporate reporting and governance frameworks are sufficiently robust.

Prior to IFRS adoption, the Nigerian reporting system had witnessed dramatic changes, including the replacement of NASB by the FRCN to enhance the adoption process. A renewed interest in corporate governance practices in Nigeria had been observed since the last decade with the promulgation of the Corporate Governance Code 2003 (Adegbite, 2012). Due to the ineffectiveness observed in the 2003 governance code in addressing corporate challenges and part of arrangement for transition to the IFRS, the federal government through the Security and Exchange Commission issued a revised code of corporate governance in 2011 (Adegbite, 2012). Therefore, given these institutional reforms, users are likely to be become more confident in the information they are provided. Presumably, this increased confidence could reduce uncertainty, promote an efficient allocation of resources and reduce capital costs. As such,

expectations could be that the transition from the NG-GAAP to IFRS would lead to more extensive accounting disclosures and more value relevant information (NASB, 2010). Thus, this study is motivated to investigate the relative and incremental value relevance of net income and comprehensive income, and the effect of reliability factors on other comprehensive income and its components.

2.1.2 Capital Market in Nigeria (Nigerian Stock Exchange-NSE)

Generally, the importance of capital markets in national economies has been emphasized (Kim, 2013). Both local and foreign investors are becoming more active in the operation of capital markets activities in order to safeguard their investments and to stimulate economic growth of a country (Marquez-Ramos, 2011; Amiram, 2012). Among other things, the global convergence of accounting language has the incentive for decreasing information processing costs and easing cross-border acquisitions and mergers among and across national markets (Marquez-Ramos, 2011; Amiram, 2012). Thus, with uniform accounting standards, within-country negative information externalities could be reduced, which would facilitate comparability and higher reporting quality (Barth et al., 2008; Barth, Landsman, Lang, & Williams, 2012). As such, accounting disclosure becomes fundamentally important in attracting investors to commit substantial resources to a national market, especially in the present economic situation in which firms are competing for scarce foreign direct investments (Kim, 2013).

The Nigerian national market was established in 1960. It was officially opened in 1961 as the Lagos Stock Exchange (Nigerian Stock Exchange [Factbook], 2012). The Exchange commenced operations in 1961 in Lagos trading with 19 listed securities. In 1977, the

Lagos Stock Exchange was renamed the Nigerian Stock Exchange with branches in some major commercial cities of Nigeria. Presently, the branches of NSE stand at thirteen, excluding the head office, each with an electronic trading floor (Factbook, 2012). However, as at December 2013, the exchange had about 200 securities listed for trading with a total market capitalization of about ₦13.23 trillion ($80.8 billion) (Factbook, 2013). As of December 2014, the equity market of the NSE closed at ₦10 trillion down from ₦13.23 trillion at the beginning of January 2014 (Egwuatu, 2014). Many companies listed on the NSE have foreign affiliations and cover the cross section of the economy (Egwuatu, 2014).

Looking at its history, the market has witnessed inconsistencies in its operations. The period of economic meltdown (2008 to 2009), which affected economies worldwide due to a crash in prices, marked the most critical period in the historic evolution of the NSE market since 1960 (Olisaemeka, 2009). During that period, NSE market capitalization declined from an all-time high of ₦13.5 trillion in March 2008 to less than ₦4.6 trillion by the second week of January 2009" (Olisaemeka, 2009). Not much improvement was recorded in 2010 to 2012. Investors in the Nigerian capital market lost 24.4 percent of the value of their equities by the end of December 2014 compared to value in 2013 (Egwuatu, 2014).

Aside the global meltdown, the poor performance of NSE market has also been associated with several other factors. These factors include poor accounting and auditing practices, structural deficiencies, regulating inconsistencies, the pull-out of various

foreign investors, a lack of infrastructure and high production costs (Olisaemeka, 2009; ROSC, 2011). In spite of these challenges, the NSE witnessed a wonderful upturn a year following the adoption of IFRS (Nwachukwu, 2014). However, whether the present pace of change in the market is because of IFRS adoption or mere coincidence remains a question open for empirical investigation, which the current study is structured to explore.

2.1.3 Transition from NG-GAAP to IFRS

Based on the NASB adoption roadmap, the transition from NG-GAAP to IFRS was planned in three phases. Commencing from the financial year beginning January 1, 2012, all Nigerian publicly listed entities and significant public interest entities were obliged to publish their financial statements based on the endorsed IFRS as indicated in Figure 2.1. After the deadline of January 1, 2012, it became mandatory for all the companies that fell into the first phase of the transition plan to issue IFRS-based financial statements for the year ending December 31, 2012 (NASB, 2010). In the second phase, all other public interest entities were mandated to adopt IFRS by January 1, 2013 (NASB, 2010). Small and Medium Enterprise (SMEs) formed phase three of the transition plan. Nevertheless, all entities that did not meet the IFRS criteria for SME's were to report using Small and Medium-sized Entities Guidelines on Accounting (SMEGA) Level 3 issued by the United Nations Conference on Trade and Development (UNCTAD). This study focuses on the companies that fall into the first phase of the transition roadmap.

Generally, the literature indicates that applying IFRS accounting standards was perceived to produce a more value relevant information (Barth et al., 2012; Kim, 2013). The evidence of more value relevant information for IFRS-based reporting suggests high quality accounting information, which has been the objective of accounting standard setting bodies (Barth et al., 2012; Kim, 2013). This is because, if the existing accounting information has proven of utility to the users, any attempts to switchover to another information source must be carefully considered (Martin, 1971).

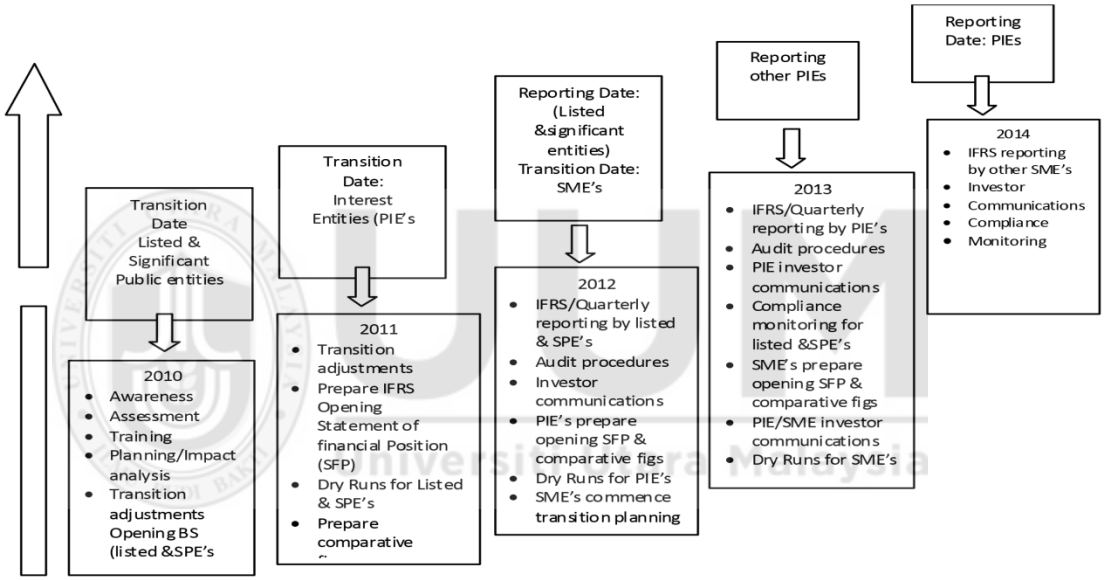

Figure 2.1
The Roadmap for the Adoption.
Source: Report of the Committee on Roadmap by NASB (2010)

This is to ensure that the new basis for developing investor information has greater relevance than the existing process to offset the switchover costs of handling different information inputs. In order to reap the benefits of global accounting standards, other reforms are critical in the implementation of IFRS (NASB, 2010; ROSC, 2011). NASB (2010) emphasizes changes in the system for data capturing and reporting, tax cycle re-appraisal (planning, provision and compliance), restructuring internal audit plan and

aligning of internal and external reporting and rigorous enforcement of IFRS requirements standards[1]. The value relevance of IFRS in terms of the quality of accounting information has been empirically documented in other parts of the world. However, the literature is scant on the value relevance of IFRS figures for users' valuation in Nigeria.

Being investor-based, the adoption of IFRS presumably will enhance comparability and higher reporting quality (Barth et al, 2008; Barth et al., 2012). Therefore, the main reason why countries switch over from domestic accounting standards to IFRS is to improve the quality and international comparability of financial statements for all users. This is essential because there is not only a national, but equally an international interest in the quality of financial statements of Nigerian firms. However, differences between existing country-GAAP and IFRS remain a major challenge in the transition process.

Prior to the adoption of IFRS, Nigerian companies prepared their financial statements in accordance with Nigerian Generally Accepted Accounting Standard (NG-GAAP) issued by the NASB. Upon adoption, publicly listed entities and significant public interest entities were mandated to prepare their financial statements based on IFRSs standards by December 2012. IAS 1 "Presentation of Financial Statements" provides exemptions and options for using the cost model or the fair value measurement of accounting transactions for first time adopters. Being investor-based accounting standards, IFRSs require financial statements to possess certain qualities such as relevance, reliability,

[1] Because accounting and reporting represent a fraction of conversion efforts, creating proper incentives and strengthening related mechanisms for IFRS adoption is necessary (NAS, 2010; Kim, 2013).

understandability and comparability. These principles, particularly relevance and reliability do not exist in the NG-GAAP (PwC, 2011). The absence of these two fundamental characteristics in the NG-GAAP does not allow for the determination of the value of assets when changing accounting policies would be more appropriate (PwC, 2011). Unlike this practice, IFRS allows voluntary changes in accounting policies if the change probably leads to more reliable and relevant financial information. Again, IFRS underscores the extensive use of fair values, a more prescriptive and comprehensive treatment of accounting transactions (PwC, 2011). Therefore, the financial statements of Nigerian firms should be affected considerably by the implementation of IFRS.

As part of primary financial statements, both accounting frameworks require a statement of financial position, income statement and statement of cash flows to be prepared and presented (PwC, 2011). However, a key departure of IFRS from NG-GAAP is the presentation of the statement of comprehensive income (PwC, 2011). One major innovation by IAS 1 "Presentation of Financial Statements" is the option of presenting a single statement divided into two sections of profit or loss and a statement of comprehensive income. Alternatively, firms may choose to present two separate statements of profit or loss and a statement of comprehensive income. In the case of the former, the statement reflects profit or loss and other comprehensive income in two sections presented jointly starting with the profit or loss and immediately followed by the other comprehensive income. The alternative approach allows presentation of profit or loss in a separate statement called the profit or loss statement. This is then followed by statement of comprehensive income in which net income is adjusted for other

comprehensive income. Under NG-GAAP, no additional statement is required to adjust net income for other comprehensive income. However, explanations are made in the notes to the financial statements about all movements in reserves (PwC, 2011). The following sub-sections highlight areas of differences between IFRS and NG-GAAP regarding the accounting treatment of other comprehensive income items.

2.1.3.1 Revaluation of Property, Plant and Equipment [PPE] (IAS 16 & SAS 3)

SAS 3 deals with Property, Plant and Equipment (PPE), commonly referred to as fixed assets employed by an enterprise in its operations. Under SAS 3, "these assets are grouped into various categories such as land and buildings, plant and machinery, equipment, furniture, fixtures and fittings, vehicles" (NASB, 1984). SAS 3 is based on the historical cost concept and the revaluation of these various categories of fixed assets, and, when accounting for specific items of these assets, the standard does not deal with the effect of changing prices. When revaluing non-current assets based on SAS 3, assets are depreciated based on their characters and usually managers opted for higher estimated useful life of the assets (PwC, 2011). Changes in the depreciation are treated as a change in the accounting policy and are usually accounted for retrospectively for the relevant years (PwC, 2011).

A comparable international accounting standard is IAS 16 on accounting for PPE. As defined by IAS 16, "PPE are tangible assets that are held by an entity for: (i) use in the production or supply of goods or services; (ii) rental to others; or (iii) administrative purposes, and are expected to be used during more than one period (PwC, 2011). When accounting for PPEs, IAS 16 permits allocation on systematic basis to each accounting

period during the useful life of the asset in order to reflect the asset's future economic benefits as expected to be consumed by the entity (PwC, 2011). The changes in the depreciation are treated as a change in the accounting estimates and hence are accounted for prospectively. IAS 16 requires explicit disclosure of methods and significant assumptions applied in estimating fair values of assets. The disclosure should indicate whether the determination of fair values was based on recent arm's-length transactions, a direct reference to observable prices, or was internally generated using valuation techniques (unobservable input). Again, the revaluation surplus information of change for the period and any restrictions on the distribution of the balance to shareholders should be explicitly disclosed (PwC, 2011). Thus, there exist substantial differences between IAS 16 and SAS 3.

2.1.3.2 Employee Benefits– Pensions (IAS 19 & SAS 8)

Both IFRS and NG-GAAP classified post-employment benefits into defined contribution plans and defined benefit plans. The contributory benefit plan requires the employer to pay fixed contributions into a pension without a constructive obligation to make further contributions to the fund "even if the fund does not hold sufficient assets to pay the benefits" (PwC, 2011). These plans exposed employees to the risk of the plan assets. According to IFRS guidelines, the pension cost is measured as the contribution payable to the fund based on services rendered by employee during a given period. The treatment of a contributory benefit plan under the NG-GAAP is comparable to IFRS.

On the other hand, defined benefit plans are pension plans other than defined contribution plans. Under this arrangement, the employer is obliged to provide agreed post-

employment benefits to current and former employees calculated based on a percentage of final salary for each year of service. Unlike a contributory pension plan, the intrinsic risks with plan assets fall on the employer. The dual frameworks are comparable with respect to contribution and risks associated with defined benefit plans (PwC, 2011). In terms of the determination of the present value of the entity's defined benefit obligation, IFRS mandated the use of the Projected Unit Credit (PCU) method, and plan assets are recorded at fair value or discounted cash flows in the absence of market prices. While NG-GAAP permit a choice of either: 1) the projected benefit cost method or 2) the accrued benefit cost method in determining the benefit obligation, plan assets are carried at cost less provisions (PwC, 2011).

Recognition of actuarial gains and losses is another grey area between IFRS and the NG-GAAP. Under IFRS, a reporting firm can adopt a policy of recognizing actuarial gains and losses 1) by immediate recognition to other comprehensive income in full as they arise and no further recycling to profit or loss, 2) as "they arise in the income statement", and by using a "corridor method"[2]. The NG-GAAP requires actuarial gains and losses to be included in the current period retirement benefit costs or spread over a period not more than five (5) years.

[2] "Corridor method requires actuarial gains/losses in excess of the corridor limit to be recognised and amortised over the expected remaining working lives of participating employees. The limit is the greater of 10% of the DBO and 10% of the fair value of plan assets at the end of the previous reporting period" (PwC, 2011).

2.1.3.3 Financial Instruments: Disclosure (IFRS 7 & No SAS Equivalent)

It is "important to note that under IFRS, financial instruments are governed primarily by three standards" (PwC, 2011): 1) IAS 32 Financial instrument-presentation; 2) IAS 39 Financial instruments: classification and measurement; and 3) IFRS 7 Financial instruments- disclosures. Important to this research is IFRS 7 originally issued in August 2005 and applicable to financial reporting periods beginning on or after 1 January 2007 (IASB, 2005). The principles of "IFRS 7 are intended to complement the principles in IAS 32 on Financial Instruments: Presentation and IAS 39 on Financial Instruments: Recognition and Measurement". IAS 39 defines fair value as "the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction" (IAS, 2003). Generally, financial instruments are initially measured at fair value and any transaction costs directly attributable to a specific financial instrument are added to or deducted from the "carrying value of those financial instruments that are not subsequently measured at fair value through profit or loss" (PwC, 2011).

Typically, IFRS 7 requires disclosures by class of financial instrument to be made based on the IAS 39 measurement categories. While disclosures are required under IFRS 7 by class of financial instrument, a reporting entity must "group its financial instruments into classes of similar instruments as appropriate to the nature of the information presented" (IASB, 2005). To determine how a financial asset is recognized, measured and disclosed in the financial statements, IAS 39 and IFRS 7 classified financial assets as either: 1) financial assets at fair value through profit or loss; 2) available-for-sale financial asset; 3) loans and receivables; and 4) held-to-maturity investments. Specifically, "available-for-

sale financial assets include all financial assets that are not classified in another category and any financial asset designated to this category on initial recognition" (IASB, 2003). Available-for-sale financial assets are measured at fair value and fair value gains and losses are recognized in other comprehensive income (IASB, 2003).

In terms of fair value disclosure, IFRS 7 requires two major disclosures on the: i) "information about the significance of financial instruments and, ii) information about the nature and extent of risks arising from financial instruments" (IASB, 2005). This disclosure could relate to the statement of financial position, statement of comprehensive income and other balance sheet/income statement related disclosures. The standard explicitly classifies valuation inputs into Level 1 (quoted prices in an active market), Level 2 (market inputs directly observable), and Level 3 (inputs not observable from any market). This fair value hierarchy categorization should be determined on the basis of the lowest level input that is significant to the fair value measurement in its entirety (IASB, 2005). For fairness, the standard emphasized that assessment of the significance of fair value measurement for a particular input entirely requires judgement and considering specific factors of the asset or liability. Specifically, IFRS 7 provides disclosure of available-for-sale financial assets measured at fair value and fair value gains and losses recognised in other comprehensive income (IASB, 2005). Appendix B (p. 321) presents a detailed disclosure requirement of IFRS 7.

By contrast, the concept of financial instruments is not defined or identified in the NG-GAAP. However, some types of financial assets are classified under investment

properties. These investments are defined as assets possessed by firms for income generation and capital appreciation and not necessarily used for production activities, trade or provision of services (PwC, 2011). The "scope of this definition is broad and incorporates equity investments, debt investments and investment property" (PwC, 2011, p. 106). Financial instruments are normally carried at cost or amortized cost and subjected to provisions for losses in value; and the revaluation gains or losses on investment property are taken to equity as opposed to profit or loss under IFRS (PwC, 2011).

Summarily, for all standards discussed above, IFRS mandates reporting entities to make an explicit statement that the financial statements comply with IFRS. This is because compliance can only be assumed when the "financial statements comply with all the requirements of each applicable standard and each interpretation" (PwC, 2011, p. 21). An explicit statement of compliance with the statement of accounting standards (SAS) is not a requirement of the NG-GAAP. Thus, substantial differences exist between the two accounting frameworks. As highlighted in the literature, too much flexibility of a given accounting framework may affect the objectivity and faithful representation of economic phenomena and the financial statement (Fields et al., 2001; Braam & Beest, 2013). Considering the difference between ownership and control, managers may use accounting choices to improve relevance and reliability or may use discretion opportunistically for self-interest. Each of these motives impacts differently the financial position of the firms. The latter is more likely in a reporting environment with relaxed accounting standards

like Nigeria (Isa, 2014). Thus, it is likely that IFRS will mean more disclosure and hence more value relevant earnings in the NSE market.

2.2 Market Value of Equity Proxies and the Concept of Value Relevance

Since the pioneering work of Ball and Brown (1968), debates on the association of value relevance with respect to accounting data and share prices/returns has gained the considerable attention of capital market researchers. This is largely due to the generally accepted assumption that accounting numbers are intended to provide investors with the relevant information that is correlated with market equity values. Common proxies for equity market values in value relevance literature are share prices and stock returns (Easton & Harris, 1991; Ohlson, 1995; Francis & Schipper, 1999).

2.2.1 Market Value of Equity Proxies (Share Price and Stock Returns)

Share price is the market value of a company at a given period, usually computed as the market value of equity divided by the outstanding shares. Generally, share price data are connected to the information that must be documented and published by the market so that prices can be observed at nearly zero cost (Krause, 2000). Being an expectational variable (Martin, 1971), and key indicator of the market financial performance of an economic entity, share price could be used as a measure of market reaction (Francis & Schipper, 1999; Tsalavoutas, Andre & Evans, 2012). Ball and Brown (1968) believed that, because security prices do adjust quickly to new information soon as it made available, "changes in security prices will reflect the flow of information to the market" (p. 160). Similarly, Fama (1970) contended that share prices will positively reflect the accounting information in an efficient market setting. In addition to the share price as an

operational test of the quality of accounting information, stock returns are extensively used when explaining information about a firm's level and change in earnings (Easton & Harris, 1991). According to Easton and Harris (1991), if share price and book values are associated, it is likely that current earnings and earnings change, scaled by price at the beginning of the period should be an appropriate variable for explaining stock returns.

Based on the above assumptions, the association between share price/stock returns and accounting data has been tested for different economic conditions and different windows (time). In this debate, event studies have used a day before, within hours of the announcement, the day of the announcement, a day preceding, one week after the announcement and a month after the announcement (Patell & Wolfson, 1982; Cowan, 1992; Beaver, 1968; Uhlenbruck, Hitt, & Semadeni, 2006). Studies employing this research design demonstrate the impact of a variety of firm-specific and economy-wide events on the value of a firm. For instance, these include the announcement of merger and acquisition (Jensen & Ruback, 1983; Uhlenbruck et al., 2006), the choice to embark on research and development (Lakanishok & Sougiannis, 2001), the decision to initiate share repurchase activities (Grullon & Michaely, 2002), rating of corporate governance practices (Johnson, Ellstrand, Dalton, & Dalton, 2005), the decision to carry out corporate social responsibility (Godfrey, Merrill & Hansen, 2009). Given rationality in the marketplace, these studies showed that the effects of an event will be reflected immediately in security prices as Mackinlay (1997) posited.

Another stream of literature that used market value of equities to explained the information content of accounting numbers are long-window association studies. Like in event studies, long window studies are also conducted for different periods (months). The choice of share price/stock returns after the financial year end depends on contextual factors and regulatory requirement. Given contextual factors and regulatory requirements, extant empirical studies have used share price or stock returns of different financial year-end. For instance, financial year-end (Amir et al., 1993; Dhaliwal et al., 1999; Kim, 2013; Mironiuca & Carp, 2014; Mecheeli & Cimini, 2014), six months (Wang et al., 2006; Barth et al., 2008; Karampinis & Hevas, 2009; Barth et al., 2012), four months (Tsalavoutas et al., 2012), three months (Kanagaretnam et al., 2009) after the financial year-end. Similar to event studies, long window studies utilised these choices to investigate the value relevance of firm specific and economic innovations such as the information content of a set of accounting standards, transition between accounting standards, changes in corporate governance practices and listing requirement.

Beginning 2014, NSE market and other databases like Proshare provide investors with periodic bulletin information on their website database for evaluating NSE listed firms. Information such as daily, weekly, monthly and yearly share prices is published to support investors, managers, analysts and other users in their decisions or analysis. Moreover, listed companies in the NSE market are mandated to file their annual reports with the security and exchange commission three months after the financial year-end. To ensure that available information is in the public domain and following previous studies, four months after the financial year-end was selected as a proxy for share prices for this

study on the assumption that investors have access to the released accounting information as Barth et al. (2008) and Tsalavoutas et al. (2012) documented. Previous literature measured stock return as total annual stock returns starting eight months before the fiscal year end to four months after fiscal year end (Christie, 1987, Tsalavoutas et al., 2012). These studies provide justifications for selecting stock prices and returns in testing the relative and the incremental value relevance of comprehensive income and its components in the NSE market.

The conviction for the choice of share prices and stock returns was based on the fact that, the study's objectives are to investigate whether the information content of comprehensive income reflected firms' value in the NSE market. Nevertheless, prior literature extensively discussed advantages and disadvantages of using the stock price and stock returns in value relevance research. For example, Kothari and Zimmerman (1995) argue that the earnings response coefficient in the price model is less biased than in the returns model when prices lead earnings, and that both models will produce biased results in the presence of value-irrelevant noise in earnings. Thus, Kothari and Zimmerman (1985) recommended that both stock price and stock returns be used in examining properties of reported information.

2.2.2 The Concept of Value Relevance of Accounting Information

The term "value relevance" was first advanced by Amir, Harris, and Venuti (1993). The key motivation of their study stems from the United States Securities and Exchange Commission requirement mandating firms registered in the United States exchange and listed in other exchange to reconcile their reported earnings and shareholders' equity to

the United States GAAP as part of Form 20-F filing. The rationale for this requirement was to provide shareholders in the United States with financial statements prepared under non-U.S generally accepted accounting principles (GAAP)[3]. The reconciliations provide the actual difference created due to application of alternative accounting practices.

Using the reconciliations differences, they investigated whether the reconciliations of accounting data to the United States increased the associations between accounting measures and market value of equities, and which differences in accounting practices summarized in the components of the reconciliation are value-relevant. Setting share prices or stock returns at six months after the financial year-end, on the assumption that reconciliations are made available to the users, evidence of the value-relevant of the reconciliations of earnings and shareholders' equity to the United States GAAP was documented. This result holds for both the aggregate and for some specific components, particularly property revaluations and capitalized goodwill. Thus, from the context of the United States, the study contributed to the policy debate on the usefulness of the reconciliation statements.

Following Amir et al. (1993), several scholars have examined the concept of value relevance to demonstrate the usefulness or quality of accounting information for equity valuation. In furtherance to Amir et al.'s (1993) conceptualisation of value relevance, Francis and Schipper's (1999) operationalised value relevance in two ways. First, they

[3]Evidence on the value relevant of the reconciliation statements to shareholders in the United States became a necessity given the extensive coverage in the popular press questioning the rationale for foreign companies to reconcile their financial statements to the United States GAAP in order to be listed on the United States securities exchanges at that time. Without empirical evidence that reconciliation data is value relevant, then it is harder to argue that such data are necessary..

construed value relevance as "the total return that could be earned from foreknowledge of financial statement information" (p.3). Second, value relevance was operationalised as the "explanatory power of accounting information for measures of market value" (p.3). The second operationalisation of value relevance explained three contemporaneous relations between measures of market value and accounting information. The first approach was termed as "earnings relation", which is the ability of earnings to explain market-adjusted returns. The second approach was referred to as "balance sheet relation", that is the ability of assets and liabilities to explain market equity values, and the third is "book values and earnings relation" approach that examines the ability of book values and earnings to explain market equity values. These relationships are interpreted in terms of the statistical association[4] of accounting numbers and the market values of a firm (share prices or stock returns).

Using the three contemporaneous relations highlighted above, Francis and Schipper's (1999) study tested the empirical implications of the claim that financial statements have lost relevance over time and practical debates over the function of financial reporting. Setting an equity metric at fifteen (15) months beginning in the first month of the firm's fiscal year[5], they documented an increase in the value relevance of book values of assets and liabilities and the book value and earnings relationship. For these relationships, no evidence was found for a decline in the explained variability of market values. In contrast, based on the magnitude and sign of earnings levels, changes for returns have

[4] "A statistical association between accounting information and market values or returns, particularly over a long window, might mean only that the accounting information in question is correlated with information used by investors" (Francis & Schipper, 1999)

[5] Fifteen (15) months beginning in the first month of the firm's fiscal year invariable means three (3) months after the financial year-end.

significantly decreased over time. Unlike earnings variables, there exists some evidence that a significantly higher portion of the variability in prices is explained by the balance sheet information, particularly for low-technology firms rather than for high-technology firms. Thus, they concluded that mixed evidence existed on whether financial reports have lost relevance over the period from 1952-1994.

Using value relevance measures calibrated in Francis and Schipper (1999), value relevance of historical earnings (net income) and fair value earnings (comprehensive income) have received varying attention. Perhaps, because earnings represent an important input for equity valuation. The issuance of relevant standards about comprehensive income reporting such as Statement of Financial Accounting Standard No: 130 (SFAS 130) in 1997 and the revision of International Accounting Standard (IAS 1) in 2007 as revised in 2011 reinforces the argument on whether the financial performance of a firm be assessed based on the current operating performance (net income) or all-inclusive income reporting (comprehensive income). If all-inclusive income measurement approach required by both IASB and FASB cannot be shown to be value relevant, then it is harder to argue that such presentation is necessary. Thus, the need to provide evidence on the importance of comprehensive income reporting form the conviction that leads researchers to investigate the relative value relevance of net income and comprehensive income as well as the incremental value relevance of other comprehensive income and its components (Jones & Smith, 2011; Kanagaretnam et al., 2009; Lee & Park, 2013; Mechelli & Cimini, 2014; Firescu, 2015; Marchinia & D'Este, 2015; Siekkinen, 2016). Like general value relevance studies, these studies used the

popular relative or incremental methodological structure. As Barth et al. (2001) and Mechelli & Cimini, (2014) documented:

1. Relative association studies compare the association between the market value of equities (share price or stock returns) and alternative income measures (net income and comprehensive income). A financial performance indicator with a higher adjusted R^2 or most significant earnings response coefficient is assumed to be the most value-relevant.

2. Incremental value relevance studies investigate whether other comprehensive income and its components are value relevant as compared to the net income. Using this approach, previous studies have concluded that other comprehensive income and its components are deemed to be value relevant if their estimated regression coefficients are significantly different from zero. This premise is the base line for this study.

To provide an in-depth explanation on the importance of comprehensive income reporting, different aspects of comprehensive income and its components has been examined. For instance, the value relevance of comprehensive income type statements (Beaver, 1986; Hirst & Hopkins, 1998; Maines & McDaniel, 2000; Chambers et al., 2007); conditional conservatism (Goncharov & Hodgson, 2011; Khan & Bradbury, 2014); earnings management and fair value hierarchy measurement (Hirst & Hopkins, 1998; Song et al., 2010; Lee & Park, 2013; Lu & Mande, 2014; Siekkinen, 2016).

Typically, other comprehensive income and its components are fair value earnings. There exists concern about the reliability of such earnings due to managerial discretion in the fair value determination. To reduce the negative attrition regarding quality of other comprehensive income, some scholars have suggested the possible influence of corporate governance practices (Habib & Azim, 2008; Bhat, 2009; Song et al., 2010; Lopes & Walker, 2012; Lee & Park, 2013) and compliance with relevant accounting standards (Verrecchia, 2001; Kang & Pang, 2005; Leuz & Wysocki, 2008; Hassan et al., 2009) on the value relevance of comprehensive income and its components. Thus, there is a growing literature examining whether the presentation of comprehensive income has economic implications in capital markets. These literatures are explored in the subsequent subsections.

2.3 Value Relevance of Accounting Earnings

The primary objective of a financial statement is to provide useful information regarding the financial position, changes and performance of the reporting entity for diverse users in making economic decisions (FASB, 2010; IASB, 2010). Some pieces of key information provided by financial statements includes earnings and its components (Subramamyam, 2014). Investors and other users have considered these earnings as an important source of information that provides a good measure of valuation and thus enables them to have an idea about the real performance of a firm.

The term “earnings” is a multifaceted variable used to describe a firm's income. Pioneering studies on the value relevance of earnings such as Ball and Brown (1968)

provide a simplistic definition of annual earnings. Efforts made in the subsequent literature to expand the conceptual understanding of earnings make it more complex, leading to two different views among scholars. Central to this debate is which approach between current operating performance versus all-inclusive income is appropriate in computing the value added to the owners' equity during a reporting period (Cheng et al., 1993; Kanagaretnam et al., 2009).

The proponents of current operating performance recognize only normal and recurring items as earnings. These scholars are of the opinion that the net income of a firm should reflect the permanent earnings generated from recurring core-business operations and as measured by historical cost and according to the accrual concept. They argued that temporary changes (dirty surplus) in the value of a firm arising from non-core operations should not follow through the income statement because they are less persistent and have limited predictive power, but should be disclosed in the statement of financial position under the owners' equity section. This argument is sound because allowing ''dirty surplus" items to pass through the income statement is likely to increase the volatility of earnings (Cheng et al., 1993; Kanagaretnam et al., 2009). However, the major challenge with this practice is that reporting significant changes in the value of a firm directly to owners' equity instead of going through the income statement reduces the quality of earnings and impairs its role as a significant input for equity valuation (Dhaliwal et al., 1999; Cahan et al., 2000; Kanagaretnam et al., 2009; Mechelli & Cimini, 2014).

Alternatively, supporters of the "all-inclusive view" contend that comprehensive income reporting requires that all changes in the value of assets and liabilities measured at their market value should flow through the income statement. The promoters of this view argued that "all-inclusive" income measurement, measures performance better than other summary income measures because it accounts for all changes in the net assets of a reporting entity during a period from non-owner sources. According to Chambers et al. (2007), the all-inclusive view is the only measure that captures all sources of value creation and appropriately distinguishes between value creation and value distribution. Thus, this measuring enrichment is considered more appropriate than other summary income measures as it captures all sources of value creation and appropriately distinguishes between value creation and value distribution (Marchinia & D'Este, 2015). As such, financial statements prepared under this approach reveal the true underlying earnings power of a company and provide users with clear insights into the future prospects of the firm (Cheng et al., 1993; Kanagaretnam et al., 2009; Mechelli & Cimini, 2014).

Interestingly, current practices around the world have adopted a mixed approach (Kanagaretnam et al., 2009). On average, reporting entities are required to report results of their core operating activities using the historical-cost approach and according to the accrual concept. On the other hand, firms can report results of peripheral activities such as changes in value of certain assets and liabilities base on fair value convention. These innovations are contained in IAS 1 "Presentation of Financial Statements" revised by

IASB in 2007 and 2009[6]. These arguments have motivated the joint performance reporting project of IASB and FASB on "Comprehensive Income Reporting" (Kanagaretnam et al., 2009; Jones & Smith, 2011; Firescu, 2015). With respect to this ideology, some psychology-based financial reporting theorists have argued that the visibility of dirty surplus flow on the face of primary financial statements will perhaps reduce the cost of information processing, the propensity of losing vital information and reduce negative earnings management (Hirst & Hopkins 1998).

In Nigeria, NG-GAAP requires accounting earnings to be disaggregated into components in the income statements. In terms of preparation, NG-GAAP requires firms to adopt the all-inclusive concept with a multiple-step format that normally include: 1) profit after tax and before extraordinary items, 2) extraordinary items, and 3) profit after extraordinary items. However, NG-GAAP does not mandate firms to present comprehensive income and its components in a comprehensive income type statement. This suggests that prior to 2012, presenting comprehensive income statement was purely voluntary because firms were not required to do so. Considering the current market environment and issues on the loss of investors' confidence on the quality of earnings, one measure of earnings may not be sufficient to explain the market value of equities. This is likely in reporting environment where investors focus only on short-term returns and ignore risks.

For instance, evidence from Taiwan Stock Exchange by Bao and Bao (2004) recognised that Taiwanese firms generally have a higher proportion of non-operating income when

[6] IAS 1 "Presentation of Financial Statements" mandates reporting and presenting comprehensive income and other comprehensive income general purpose financial statement. The revised IAS 1 became effective beginning on or after 1 January 2009.

compared with firms in the United States and the United Kingdom. Thus, they documented the value relevance of both non-operating income and operating income due to investors high concern for short-term returns and less emphasis on risks. The implication of this finding to analysts and investors in the Taiwan exchange was to consider both operating income and non-operating income when analysing firm value. Hence, they recommended that valuation models based on multiple earnings components have a higher explanatory power than those based on net income alone. Evidence from Bao and Bao (2004) seems to support Chambers et al. (2007), Khan and Bradbury (2014) and Schaberl and Victoravich (2015). These studies are of the view that the mandatory issuance of a comprehensive income statement at least reduces the risk of losing relevant information.

Given the low disclosure of accounting information in Nigeria as NASB (2010), ROSC (2011) and Okaro et al. (2013) identified, it is a possibility that comprehensive income, other comprehensive income and its components are at least as value relevant as net income in the NSE market. This conviction is formed based on the positions of Chambers et al. (2007), Khan and Bradbury (2014) and Schaberl and Victoravich (2015). Thus, presentation of fair value gains and losses on non-current assets, available-for-sale financial assets and actuarial gains and losses on defined benefit plans could mean enhance transparency of financial statements and provide the users with different financial performance indicators that could be viewed and evaluated discretely as compared to net income. Section 2.3.1 explains the concept of net income and comprehensive.

2.3.1 The Concept of Net Income and Comprehensive Income

Net income is a bottom line earnings metric that measures the amount a firm earned during a period, typically quarterly or yearly (Subramanyam, 2014). It denotes earnings per share of a company at the end of the financial year (Cheng et al., 1993; Subramanyam, 2014). Comprehensive income, on the other hand, is net income adjusted for components of other comprehensive income (Cheng et al., 1993; Kanagaretnam et al., 2009). Both FASB and IASB require items that are non-core business income to be included as comprehensive income. While economic entities, on average, are required to report the results of their core-operating activities based on the historical-cost convention, they are also required to report outcomes of peripheral activities using fair value accounting. These innovations are contained in IAS 1 "Presentation of Financial Statements" as revised in 2007 and 2009[7]. A more encompassing earnings measurement as outlined by IAS 1 requires adjusting net income from core-operating activities for other peripheral activities such as:

1. Changes in revaluation surplus for Property, Plant and Equipment (IAS 16);
2. Actuarial gains and losses on defined benefit plans recognised in accordance with paragraph 93 of IAS 19 Employee Benefits;
3. Changes in foreign currency from translating the financial statements of a foreign operation (IAS 21 the Effects of Changes in Foreign Exchange Rates); and
4. Gains and losses on re-measuring available-for-sale financial assets (IAS 39 Financial Instruments: Recognition and Measurement).

[7] IAS 1 "Presentation of Financial Statements" mandated reporting and presenting comprehensive income and other comprehensive income in the financial statement. The revised IAS 1 became effective beginning on or after 1 January 2009.

Thus, comprehensive income for the period is determined after net income is adjusted for fair value gains and losses on components of other comprehensive income. The rationale for this innovation by the IASB as well as FASB is to improve the transparency of financial statements and to provide users of accounting information with more financial performance measures (Kanagaretnam et al., 2009; Mechelli & Cimini, 2014; Firescu, 2015). As discussed in the next section, a sizeable amount of the literature has examined the relative value relevance of net income and comprehensive income for different jurisdictions and time frames using different research designs.

2.3.2 Review of Relative Value Relevance of Net Income and Comprehensive Income

Several studies have contributed empirical evidence supporting or refuting the importance of comprehensive income reporting. Amongst the early studies on this debate, Cheng et al. (1993) investigated the relative information content of operating income, net income and comprehensive income for an average yearly observation of 922 United States firms for 18 years. In terms of information usefulness, Cheng et al. (1993) documented that operating income weakly dominates net income, and that both operating income and net income dominate comprehensive income. The result was interpreted to mean a greater value relevance to investors given the fact that the three earnings definitions differ with respect to the inclusion of gains/losses unrelated to the firm's operating activities.

Dhaliwal et al. (1999) was motivated by the introduction of SFAS 130 “Reporting Comprehensive Income” in the United States. No clear evidence was found to support the claim that comprehensive income was more strongly associated with market returns

in the United States except for financial firms. However, net income was more positively priced using the market value of equity and future operating cash flows proxies than using comprehensive income. Cheng et al. (1993) and Dhaliwal et al. (1999) shared the features of examining the United State exchange firms and used the net income after extraordinary items and discontinued operations (#172). However, the data set for comprehensive income differ between the two studies. While Cheng et al. (1993) examined periods when comprehensive income reporting was voluntary, Dhaliwal et al. (1999) used "as if" SFAS 130 comprehensive income consisting of dirty surplus items that were reported previously as direct adjustments to equity. This suggests that the gains/losses unrelated to the firm's operating activities used to adjust net income differs substantially between the two studies[8]. However, both documented dominance of net income over the comprehensive income.

Like in the United States and the United Kingdom, IASB's comprehensive income proposal was also promoted by the Dutch and Australian financial reporting standard setters. This initiative motivated Wang et al. (2006) and Brimble and Hodgson (2008) to investigate whether dirty surplus accounting flows are better explanatory variables of firm value as compared to the net income in Dutch and Australian exchanges. They did, for Dutch and Australian firms, find evidence that net income and comprehensive income are significant predictors of six months and annual stock returns respectively, although, net income seems a more relevant measure of stock returns in the period considered. The

[8] Cheng et al. (1993) calculate comprehensive income as change in retained earnings (#36) + preferred dividends (#19) + common dividends (#21). Dhaliwal et al. (1999) computed comprehensive income after adjusting net income for change in the balance of unrealized gains and losses on marketable securities, the change in the cumulative foreign currency translation adjustment and the change in additional minimum pension liability in excess of unrecognized prior service costs

Dutch Civil Code, article 210 obliged firms to publish financial statements five months after the fiscal year-end with the extension one-month for the release of the financial statements. Hence, the choice of six-month stock returns by Wang et al. (2006) allows the market to fully assimilate accounting information.

The extension of the fair value measurement concept into the income statement from the balance sheet could have a far greater impact on European code law countries (Goncharov & Hodgson, 2011). This is likely due to an" underdeveloped corpus of equity financial analysts" and a heavy reliance on debt capital in Continental Europe. After analysing 56,700 European firm years over sixteen countries, the dominance of net income over the comprehensive income for equity valuation and cash flow prediction was documented[9]. Because comprehensive income "reverses the conservative attributes of income, it has policy implications for providers of debt capital in a European setting" (p. 1). Turen and Hussiny (2012) also documented that comprehensive income was not shown to be a better measure of stock price, stock return and operating cash flow for Gulf Cooperation Council insurance firms.

The motivations and opportunities for different accounting practices such as source of funds, legal enforcement and investor protection that exist in Europe warranted the study of Mechelli and Cimini (2014). These motivations could lead to different choices when recognising other comprehensive income items, such as when choosing between cost and revaluation models (IAS 16 and IAS 38) or when choosing the accounting treatment of

[9] There results are robust to pooled and country specific regressions, controls for non-linearities, impact of reporting incentives, and the underlying accounting framework

actuarial gains and losses (IAS 19). To the extent that these options exist, revenues and expense recognized in other comprehensive income could significantly differ across European countries. Using a sample of 16,511 firm-year observations covering 2006 to 2011, price and return reactions to the magnitude of both net income and comprehensive income was observed, but comprehensive income was continuously lower than the net income. This result held for each subsample of countries clustered according to the source of funds, the level of legal enforcement and the level of investor protection.

As other comprehensive income continues to be at the centre of standard setting debates, the preparers of financial statement "claim that the 'excess' volatility of comprehensive income confuses financial statement users" (Khan & Bradbury 2014, p. 1). Given the needs to shed light on the volatility and risk relevance of comprehensive income relative to net income, Khan and Bradbury (2014) examined a sample of 92 New Zealand nonfinancial firms from 2003–2010. Even though their results revealed greater volatility of comprehensive income, such was not related to market risk and the incremental volatility of comprehensive income does not modify the pricing of net income[10]. Marchinia and D'Este (2015) documented that the first-time adoption of comprehensive income reporting significantly affected Italian reporting firms, but net income was more important in the years before and after the adoption period. The result revealed that mandatory reporting of comprehensive income was of particular relevance for Italian firms considering the wide use of the historical cost accounting model and concentrated ownership of listed public firms.

[10] These results hold when asset revaluations are excluded from other cpmprehensive income.

By contrast, some authors have also reported opposite result, suggesting that comprehensive income has higher value relevance than net income. For instance, users (such as the Association for Investment Management and Research) called and lobbied for comprehensive income disclosure with the view of excluding from net income items over which they have less control. Cahan et al. (2000), and Biddle and Choi (2006) provide some market-based tests for this demand using firms in the United States and New Zealand. Both documented that comprehensive income is more strongly associated with stock prices and returns compared to the traditional net income for information usefulness. A further analysis by Biddle and Choi (2006) revealed that, when these earnings measures were explored for prediction of future operating income, no income measure clearly dominated in decision usefulness. Nonetheless, comprehensive income emerged to be a better earnings measure for predicting future net income and fully comprehensive income[11].

One viewpoint expressed in Cahan et al. (2000) and Biddle and Choi (2006) and some other studies that favour net income is the measurement enrichment of comprehensive income. This is because comprehensive income combines earnings from operating performance and earnings generated by the fair value difference between two accounting periods, which represent more disclosure of financial information from views of investors and managers. Thus, different users' applications of different items of comprehensive income lend support to the IASB's proposal on the disclosure of comprehensive income.

[11] Fully comprehensive income was measured as the change in retained earnings plus common stock dividends (Compustat data item #36 + #21).

Table 2.1

Summary of Selected Empirical Studies on the Relative Value Relevance of Net Income and Comprehensive Income

Author(s) and Year of Publication	Country and Economic Sector	Variables Examined		Models Used	Key Findings
		IV's	DV's		
Marchinia and D'Este (2015)	Italian exchange	NI, and CI	ROE		First time adoption of CI significantly affect Italian firms and CI dominates NI
Khan and Bradbury (2014)	US non-financial companies	NI, and CI	Annual SP, RET volatility and Beta	Price and returns models	Both NI and CI were value relevant, but CI is more volatile than NI. However, the volatility of CI as compared to the NI is not priced.
Mechelli and Cimini (2014)	15 European countries belonging to the EU	NI, ΔNI, CI and ΔCI	12-month actual RET and SP	Price and returns models	Both NI and CI were value relevant, but NI was continuously greater than CI for all benchmarks of comparison.
Goncharov and Hodgson (2011)	European firms	NI and CI	Three months SP and raw RET	Price and returns models	For valuation purposes and predicting cash flows, NI dominates CI.
Biddle and Choi (2006)	US firms	NI $_{130,}$ NI_{broad}, and NI	CRR and CAR	Return model	CI defined in FASB 130 dominates the traditional NI in information content for three industry groupings of financial, manufacturing and other firms.
Cahan et al. (2000)	NZE firms	BVS, E's, DIV, CI and NI	Year-end SP	Price model	CI is superior to NI, but there is no benefit in reporting the separate components of CI.
Dhaliwal et al. (1999)	US firms	NI and CI.	Year-end SP and RET	Price and return models	No evidence that CI is more strongly associated with RET than NI. NI is more important when assessing future operating cash flows than CI.
Cheng et. al (1993)	US firms	NI. ΔNI, CI & ΔCI.	NI $_{130,}$ $NI_{broad,}$ and NI	Return model	In terms of information content, findings show that NI dominate CI.

Note: DV represents the dependent variable; IV stands for independent variable; SP: is share price; RET is stock returns, CAR is cumulative abnormal return; CRR is cumulative rate of return, E is earning per share; NI represents net income; CI is comprehensive income and Δ denotes an annual change in the value of respected variables.

2.3.3 Review of Incremental Value Relevance of Net Income and Other Comprehensive Income and Its Components

Previous literature has put forward a series of arguments that broader definitions of income are more useful for investment decisions, but such a position may not be the case for components of other comprehensive income (Biddle & Choi, 2006). This position partly drives several studies on the incremental value relevance of other comprehensive income and its items. For instance, using 1-year intervals, Dhaliwal et al. (1999) found no clear evidence that other comprehensive income reflects stock returns better than the net income. Within-industry results for other comprehensive income was driven by the financial industry, which they interpreted to mean the lack of materiality for the sample of non-financial sectors based on the mean absolute value. Evidence about the lack of materiality for sample of non-financial motivates a further sensitivity analysis between financial non-financial firms that fall in the upper decile of the absolute value. The results alleviate the relative lack of materiality of other comprehensive income for non-financial firms.

Misgivings about dirty surplus accounting practices motivated O'Hanlon and Pope (1999) to investigate two main issues for a sample of firms from the United Kingdom over intervals of up to 20 years. They investigated whether dirty surplus accounting might result in value-relevant items being reported within "dirty surplus flows" rather than within earnings, and whether the low transparency of dirty surplus flows might reduce investors' ability to recognize value-relevant items in a timely fashion. They provided strong evidence that ordinary profit (net income) and extraordinary items are value-relevant. Little evidence was found that dirty surplus flows such goodwill write-

offs and foreign currency translation differences are value-relevant. The results hold even when very long accumulation intervals are employed. Nonetheless, reporting dirty surplus flows within earnings presents an opportunity for firms to communicate value-relevant earnings other than net income. Consequently, allowing value-relevant flows to pass reported earnings reduced creative accounting activity for the sample of United Kingdom firms.

The Association for Investment Management and Research (AIMR) expressed concern over the arbitrary exclusion of certain performance-related changes in net assets from the income statement. According to AIMR, disclosures of comprehensive income was desirable because they allow investors to better estimate the value of the firm. This motivated Cahan et al. (2000) to provide two market-based tests on the usefulness of comprehensive income using New Zealand listed firms. Cahan et al. (2000) revealed that other comprehensive income provides incremental information over traditional net income; however, no benefit exists for reporting a separate comprehensive income type statement.

Similar to Cahan et al. (2000), some studies were driven by the general perception that reporting of comprehensive income and its components provides security markets with incremental value-relevant information over the traditional historical-cost earnings approach. For instance, Kanagaretnam et al. (2009) revealed that yearly other comprehensive income and sample partitioned up to 10 years' interval was associated with three-month stock prices and returns as compared to net income for Canadian firms.

Wang et al. (2006) and Brimble and Hodgson (2008) suggested that accumulated dirty surplus flows for samples partitioned into interval of 2, 5, and 10 years and yearly other comprehensive income were not value relevant for Australian and Dutch listed firms. Brimble and Hodgson (2008) concluded that reporting dirty surplus flows in Australian do not incrementally impact upon stock prices. However, because analysis was conducted only from the perspective of equity-valuation, caution should be exercised in interpreting these findings when recommending standard-setting inferences. Because, even if other comprehensive income was not a good explanatory variable for stock returns, at least it provides more reliable information that could reduce the political and liability costs of auditors (Wang et al., 2006).

The IFRS adoption, which brought about the inclusion of unrealised fair value changes in the income determination abruptly created a conceptual gap with Europe financial reporting practices. The difference between the stewardship/debtholder-oriented[12] environment and equity holders financial reporting structure motivated Goncharov and Hodgson (2011) to examine the incremental value relevance of other comprehensive income for Continental Europe. Using the measurement approach[13], the results indicated that incremental information of other comprehensive income was only driven by unrealised available-for-sale securities (Goncharov & Hodgson, 2011). Jones and Smith

[12] In the Continental Europe, financial reporting framework is provided by European Directives, but varies between countries some of which are either provided by professional bodies or government agencies. (Goncharov & Hodgson, 2011).

[13] The measurement approach was considered more appropriate for Continental European firms that operate in less-developed secondary stock markets and the measurement approach was more attuned with the qualitative relevance objectives of standard setters.

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(2011) found that other comprehensive income was value relevant, but displayed a negative persistent and had a weaker predictive value for a sample of firms in the United States.

Fasan et al. (2014) were motivated to examine how the implementation of revised IAS 1 has affected the extent to which the market takes other comprehensive income into account. Using an extensive data set covering firms in 19 countries from 1995 to 2010, they revealed an increase in the value relevance of other comprehensive income in the post-IAS/IFRS in 2005 and IAS 1 Revised in 2009. Using a cross-country research design for European countries, Mechelli and Cimini (2014) documented an incremental value relevance of other comprehensive income, but that value relevance was continuously lower than the net income because of non-recurring nature of its components. However, the incremental value relevance differs across European countries depending on the source of funds and the legal system[14].

Moreover, diverse results have been presented regarding the incremental value relevance of the components of other comprehensive 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 reserves. FASB and the ISAB believed a comprehensive income statement format provides the greatest transparency and information for decision making and so do items of other comprehensive income. Some psychology based-researchers such as Hirst and Hopkins

[14] This evidences suppors the claim of different motivations and opportunities for different accounting practices among European listed entities belonging to the EU at the date of issuance of EU Regulation 1606/ 2002.

(1998) and Maines and McDaniel (2000) backed the stance that alternative earnings could mean more reliable information to the users of financial statement.

For instance, Barth and Clinch (1998) documented varying results depending on asset class. The revalued aggregate 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), Chambers et al., (2007) and Hlaing and Pourjalali (2012) 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" (p. 20).

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[15]. 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" (p. 5).

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

[15] Based on the return/earnings association approach, Dhaliwal et al. (1999) investigated whether adjusting net income for foreign-translation adjustment increased the association of earnings with returns. They found no evidence that adding foreign translation and pension adjustments to net income affected the return/earnings association.

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 beyond net income. 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 (p. 24). One possible explanation for Dhaliwal et al.'s (1999) results is that the determination of minimum pension liability involves some level of management discretion exercised 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, p. 11). 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 incremental value relevance of dirty surplus flows beyond traditional net income. Thus, a clear conclusion cannot be drawn on the incremental value relevance of dirty surplus. 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 other comprehensive income in the various reporting environments, and the transitory nature of other comprehensive income and periods examined (Dhaliwal et al., 1999; Chambers et al., 2007). Below is a summary of selected empirical studies on the incremental value relevance of other comprehensive and its components.

Table 2.2
Summary of Selected Published Empirical Studies on the Incremental Value Relevance of Other Comprehensive Income and its Component

Author(s) and Year of Publication	Country and Economic Sector	Variables Examined		Models Used	Key Findings
		IV's	DV's		
Schaberl and Victoravich (2015)	US firms	NI, LOSS and OCI	Three months RET	Return model	OCI has incremental value relevance, determined by the choice of location based on the firm's reporting history.
Mechelli and Cimini (2014)	15 European countries that belonged to the EU.	NI, ΔNI, and OCI	12-month actual return Price per share	Price and return models	The NI and OCI are value relevant, but the NI is always greater than the OCI.
Lee and Park (2013)	UK firms	NI, ΔNI OCI ΔOCI, ΔSEC, ΔNSEC and Big4	Returns eight months before fiscal-year-end	Return model	OCI of Big4 clients is more valuable-relevant than those of non-Big4 clients, especially for more subjective OCI components compared to a less subjective component.

Table 2.2 (Continued)

Summary of Selected Published Empirical Studies on the Incremental Value Relevance Other Comprehensive Income and its Component

Author(s) and Year of Publication	Country and Economic Sector	Variables Examined		Models Used	Key Findings
		IV's	DV's		
Kanagaretnam et al. (2009)	TSE firms	BVS, NI, FX, SEC and HEDGE	SP and return 3 months after	Price and returns models	OCI is more strongly associated with the market value of equities than NI. SEC and HEDGE are significantly associated with price and returns.
Chambers et al. (2007)	US firm	NI, OCI, MKT, FCT, and PEN	Buy-and-hold raw return eight months before to four months after	Return model	In the post-SFAS 130 period, OCI is value relevant consistent with economic theory.
Biddle and Choi (2006)	US firm	$NI_{130,}$ $NI_{broad,}$ NI, MKT, PEN and FCT	Cumulative CRR and CAR	Return mode	The combinations, SEC, PEN and FCT provide incremental information, but SEC has more explanatory power.
Cahan et al (2000)	NZE firms	E's, DIV, CI, NI, RFA and CUR	Year-end SP	Price model	RFA provides incremental value relevant information beyond NI.
Dhaliwal et al. (1999)	US firms	CI, NI, SEC, FCT, and PEN	Year-end SP and Return	Price and return models.	Only marketable securities incremental information.
O'Hanlon and Pope (1999)	UK firms	DS, REV, OP, EI, FX GW and SUND	Annual stock Return	Return model	Extraordinary items provide value relevant information, but little evidence exist that other OCI items flows are value-relevant. Reporting OCI reduced creative in the United Kingdom.

Notes: * NZE: New Zealand Exchange, TSE: Toronto Stock Exchange.

*DV represents dependent variable; IV stands for independent variable; SP is share price; RET is stock returns; CAR is cumulative abnormal return; E's is earning per share; NI/OP represents net income; OCI change in accumulated other comprehensive income; and Δ denotes annual change in the value of respected variables. DIV dividend paid; REV is fixed assets revaluation; CUR/FX is foreign currency translation adjustments; SEC is available-for-sale investments; FCT is foreign currency translation adjustment; PEN is actuarial gains and losses on defined benefit plans; DS denotes aggregate dirty surplus flows; EI denotes extraordinary items; GW is goodwill; and SUND denotes sundry items.

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2.4 Reliability Factors Influencing Comprehensive Income Reporting

The growing complexities in size and operation of businesses and incessant corporate failure increase the demand for the reliability of reported financial information. Reliability as a concept is the second most important qualitative characteristic that enhances the quality of accounting information to economic decision makers of a financial statement (IASB, 2010). However, according to Botosan (2004), reliability may be the most difficult to assess. The difficulty associated with direct measurement of reliability has reduced the level at which it is being researched (Maines & Wahlen, 2006). According to the IASB 2010 conceptual framework, reliability otherwise known as "Faithful Representation" is defined as the extent to which the information contents of annual reports objectively represent an underlying economic construct. In other words, reliability demonstrates the extent of neutrality, completeness, verifiability and material errors free of a financial statement (IASB, 2010).

The above definition is important given the current accounting framework that tilts towards the fair value approach, which is characterized with the trade-off of relevance and reliability (Maines & Wahlen, 2006; Song et al., 2010; Christensen et al., 2012; Lee & Park, 2013). The managerial discretion allowed in fair value determination in the absence of observed prices might rather compound reliability concern. This is due to intrinsic measurement error and management-induced error (Song et al., 2010; Lee & Park, 2013). This possibility induces information asymmetry problems, leading to severe moral hazard problems, and consequently threatening an investor's perceptions of the reliability of fair value of earnings (Bartov et al., 2007; Song et al., 2010). In response to

users' concern for reliability, a large body of literature has analysed the efficacy of non-financial information such as corporate governance mechanisms and compliance with accounting standards as an indirect proxy for reliability (Maines & Wahlen, 2006; Song et al., 2010).

Because the present accounting environment is tilted towards fair value accounting, effective corporate governance mechanisms became more important to maintain public trust on the quality of accounting information (Habib & Azim, 2008; Bhat, 2009; Song et al., 2010; Lopes & Walker, 2012). Habib and Azim (2008) and Song et al. (2010) argued that good corporate governance practices could lead to positive behavioural attitude and mitigate agency costs and subsequently lead to high-quality accounting numbers. This is because both internal and external audit functions perform several audit tasks, which overall, strengthen the operational environment and ensure transparent financial reporting process. Thus, the essential role of corporate governance mechanisms with regard to improving the transparency and quality of the financial information has led many researchers to use it as a proxy for reliability.

According to Song et al. (2010), the issuance of accounting standards on fair value hierarchy levels of measurement such as IFRS 7 provides a basis for direct tests of the association between the reliability of fair value information and equity prices. Based on this premise, several studies have documented that the reliability of fair values gains and losses decreases with a decreasing hierarchy level. This is because measurement inputs other than Level 1 (mark-to-market) are perceived as lower inputs (mark-to-model),

which experts have characterised as “mark-to-myth.” The decreasing reliability of Level 2 and Level 3 has been associated with either unintentional measurement errors or deliberate use of discretion for model-based fair values (Song et al., 2010; Lee & Park, 2013; Lu & Mande, 2014). Apparently, fair value hierarchy levels allow users of financial statement to assess whether the value relevance of less reliable fair values (Level 3) is different from that of more reliable fair values (Level 1).

Firm level of compliance with disclosure requirements has also been associated with the reliability of accounting numbers (Verrecchia, 2001; Kang & Pang, 2005; Leuz & Wysocki, 2008; Hassan et al., 2009). Observing the disclosure requirements of relevant accounting standards could suggest that reported information possesses a threshold level of reliability (Maines & Wahlen, 2006; Braam & Beest, 2013). This idea is seen as relevant because compliance with the requirements of each standard in determining the fair value of accounting assets and liabilities has valuation implications that can either reduce or increase the agency costs of financial reporting (Nobes, 2006; Maines & Wahlen, 2006). Arguably, compliance with financial accounting standards reflects the reliability of reported information.

Therefore, prior studies have established the effectiveness of corporate governance mechanisms, hierarchy levels of measurement and level of compliance on investors’ judgments of the reliability of accounting amounts. In turn, reliability factors presumably reduce intentional human bias or unintentional errors (Maines & Wahlen, 2006; Song et al., 2010; Lee & Park, 2013) and promote neutrality in accounting choices (Fields et al.,

2001; Maines & Wahlen, 2006; Christensen et al., 2012). Thus, tests of reliability in this studies were based these factors. The following subsections provide detailed discussions on corporate governance mechanisms, fair value hierarchy information and level of compliance.

2.4.1. Corporate Governance Mechanism as a Proxy for Reliability

Corporate governance is a multidimensional concept that has been defined in many ways. Common in the literature is its role as the mechanisms that are used to protect the interests of different stakeholders (Song et al., 2010). A consensus exists in the literature that the adoption of "good corporate governance" practices enhances financial reporting quality and firm performance (Habib & Azim, 2008; Song et al., 2010; Lee & Park, 2013). Because governance mechanisms aim at guaranteeing transparency, incessant pressure exists that firms adopt good corporate governance, which is often formalized in terms of corporate governance codes. Several studies have attempted to measure the effect of corporate governance by aggregating a number of variables[16] relating to audit functions and board characteristics (Habib & Azim, 2008; Song et al., 2010).

Historically, corporate governance practices or codes were first designed in developed countries. However, developing countries have found it essential to mimic developed countries (Reed, 2002) in order to attract capital inflows and to enhance capital market operations. Among other things, the discussion about achieving these markets need is

[16] It is worthy of note that no single standard corporate governance index exists that is generally acceptable, perhaps due to the differences in good corporate governance practices among countries and investors.

centred on the oversight function relating to the financial reporting process. To provide a market-based test in demonstrating public trust in corporations, several recent studies have included some corporate governance in their regression models variables relating to audit functions as a test of credibility and reliability of accounting information. These measures include audit committee independence, audit committee financial expertise, the frequency of annual audit committee meetings, audit committee size, auditor's reputation and disclosure of no any material internal control weakness (Habib & Azim, 2008; Song et al., 2010; Lee & Park, 2013).

These studies have argued that these variables serve as a bonding and monitoring mechanism that enhances the reliability of financial statements for investors. Specifically, Habib and Azim (2008) and Song et al. (2010) had highlighted the importance of these variables individually and their combined effect in mitigating information asymmetry problems relating reporting of book value, earnings per share and fair value hierarchy levels of measurement. Evidence of reduced agency costs, which, in turn, improve firm performance was documented by several scholars (Habib & Azim, 2008; Bhat, 2009; Song et al., 2010; Lee & Park, 2013). According to Maine and Wahlen (2006), the reliability of accounting information is a function of the interaction between accounting standards and the parties (preparers and auditors) that implement them. Thus, the involvement of external auditors, effectiveness of the audit committee and internal control systems could provide assurances to investors that accounting numbers are faithfully presented. This current study examines the influence of these variables on the

value relevance of other comprehensive income and fair value hierarchy levels of measurement.

The following subsections provide a review of previous empirical literature on governance practices relating to: 1) the audit committee effectiveness, 2) the auditor's reputation, and 3) internal control systems.

2.4.1.1 Audit Committee Effectiveness

Financial statements issued by companies are increasingly becoming a subject of scrutiny by investors and other users of financial statements (Imhoff, 2003). In an environment in which doubt has been raised and fulfilling market expectations is paramount, ensuring fair and accurate financial reporting is essential for efficient capital market operation (Audit Committee Institute [ACI], 2008). Evidence from prior studies suggests that corporate governance mechanisms at the company level matter more in countries with weak legal environments (Klapper & Love, 2004). The audit committee oversight function, being one of the components of corporate governance element frequently associated with the quality and integrity of financial statements, is vital in meeting these expectations (Imhoff, 2003; Rezaee, 2004). An audit committee by virtue of its existence, pursues oversight responsibility relating to the financial reporting process, audit functions and internal control structure and discharging these functions effectively, the committees ensure quality accounting information (Rezaee, 2004).

A best-practices audit committee has been emphasized by several regulatory and legislative reforms such as the Blue Ribbon Committee and the Sarbanes Oxley-Act 2002

aimed at improving the effectiveness of corporate reporting. Economic globalization has forced many countries of the world to embrace good corporate governance practices, including Sub-Saharan African countries (Nganga, Jain, & Artivor, 2003; Asiedu, 2004) in order to attract foreign direct investment. Thus, a growing number of Sub-Saharan African nations have taken steps to adopt corporate governance and codes similar to those implemented in the developed countries (Nganga et al., 2003). For example, the corporate governance codes of Nigeria such as CAMA 1990 as amended 2004 and SEC 2011, recommended that an audit committee should have a majority of independent directors; have at least one member with financial expertise; and fulfil minimum membership and meeting requirements. These requirements are essential factors in ensuring the effectiveness of the audit committee.

Prior research suggests that firms with either no audit committee or an ineffective audit committee that meets infrequently are more likely to engage in financial statement fraud and other accounting irregularities (Abbott & Parker, 2000; Abbott, Parker, & Peters, 2004). The frequency of audit committee meetings enhances the relationship between the committee members and auditors (internal and external). This logic is based on the assumption that the frequency of audit committee meetings allows committee members ample time to review a firm's internal control systems and overall audit processes to ensure financial reporting quality (Barua, Rama, & Sharma, 2010; Woidtke & Yeh, 2013). Because of these audit committee meetings, board members are more likely to be updated on current auditing issues and to be more diligent in fulfilling their duties (Yasin & Nelson, 2012). For example, Xie, Davidson, and DaDalt (2003) found that the

frequency of audit committee meetings was negatively associated with discretionary current accruals and reduced incidences of financial reporting problems.

Furthermore, the presence of a financial and auditing expert sitting on the audit committee leads to higher-quality financial statements. Davidson, Xie, and Xu (2004) claimed that the market in the United States experienced significant positive share price reaction upon appointment of financial experts to sit on a firm's audit committee, especially when these directors had audit firm experience. In the same vein, Naiker and Sharma (2009) contended that audit committee experts with audit firm experience were the most effective at reducing internal control problems. Thus, the above evidence suggests that audit committee effectiveness can improve financial reporting quality by reducing incidences of earnings management, accounting irregularities and fraudulent reporting. Thus, market participants may perceive accounting information by these firms to be more reliable and relevant (Rainsbury et al., 2009).

Additionally, a higher proportion of independent non-executive directors relative to the total number of directors sitting on the boards was associated positively with the comprehensiveness of financial reporting (Chen & Jaggi, 2000), negatively associated with earnings management (Klein, 2002; Jenkins, 2003) and more reliable reported earnings (Woidtke & Yeh, 2013). By contrast, Rainsbury et al. (2009) and Suárez, García, and Gutiérrez. (2013) revealed that the proportion of independent directors did not enhance the quality of financial reporting. Similarly, the composition of the audit committee was associated with the quality of financial reporting, in that board and audit

committee activity and their member's financial sophistication could be important factors in reducing earnings management. This implies that more human resources for effective scrutiny of subjective accounting measures that will enhance the value relevance of other comprehensive income (Xie et al., 2003).

Overall, the influence of audit committee effectiveness on the quality and reliability of financial information is unequivocally established in the literature. Considering the fact that other comprehensive income includes several dirty surplus flows measured using different level hierarchy information, investors are less likely to have the capacity to verify the reliability of such estimates (PCAOB, 2011; Lee & Park, 2013). This could suggest a reliability concern, especially for unobservable input and perhaps observable input due the perceived subjectivity in establishing fair value input (Song et al., 2010; Lee & Park, 2013). Assuming that audit committee effectiveness reduces the level of subjectivity and professional judgment involved in fair-value measurements, the prediction can be made that other comprehensive income of firms with an effective audit committee could be more positively priced by the investors. As a part of corporate governance measures, this concern is addressed by interacting these variables with other comprehensive income.

2.4.1.2 Auditor's Reputation

Audit quality is defined as the probability that an auditor will both discover and report a breach in the client's accounting process (DeAngelo, 1981). The statutory requirement for certification of financial statements to provide assurance that accounting numbers are in accordance with the accounting norms and principles underscores the role of a financial

audit. Thus, the auditing process can serve as a monitoring mechanism in curtailing agency costs induced by information asymmetry among interested parties (Jensen & Meckling, 1976; Watts & Zimmerman, 1983).

Auditor's reputation defined as "Big 4 and non-Big 4" has a significant impact on audit quality, and Big 4 firms tend to have stronger incentives to reduce the likelihood of audit failure in order to maintain their reputations (Song et al., 2010; Lee & Park, 2013; Mironiuca & Carp, 2014). Generally, the involvement of auditors in the process of financial reporting has been found to enhance the reliability of financial information and is essential for effective operation of the capital markets (Ismail & Chandler, 2005; Francis & Michas, 2013; Francis, Maydew, & Sparks, 2013). Reputational auditors exhibit greater concern that financial statements reflect the true and fair view of the assets, liabilities, profit or loss and overall financial position of an entity to maintain public trust in a corporation (DeAngelo, 1981; Lee & Park, 2013). Consequently, the presence of a Big 4 audit firm increases the transparency of information and enhancing accounting information reliability and subsequently improves the value relevance of accounting information.

Furthermore, Healy and Lys (1986) indicated that the value relevance of accounting earnings and book value of equity audited by Big 8 firms were superior when compared to those audited by non-Big 8 firms. A similar conclusion was reached in Mironiuca and Carp (2014) that the value relevance of accounting data in the Bucharest Stock Exchange had a lower mean value as compared to international standards. The inclusion of audit

reputation (the Big 4) into a regression model significantly polarized the results. They further hinted that the value relevance of the sampled companies certified by a Big 4 firm surpassed the level recorded in the case of annual reports audited by non-Big 4. Because Big 4 audit firms possess vast professional and technical skills and have their reputations at stake, they have stronger incentives to ensure that financial statements reflect the true and fair view to maintain public trust in corporations (Lee & Park, 2013). Bhat (2009), Song et al. (2010) and Lee and Park (2010) examined the effect of audit reputation on investors' pricing of fair value hierarchy earnings. The result indicated a significant valuation difference between Big 4 and non-Big 4 audit firms, particularly for more subjective items of comprehensive income. Their result was based on the assumption that Big 4 auditors play a broader role in limiting the opportunistic behaviour of the managers from manipulating accounting earnings, hence reducing agency cost.

Therefore, because other comprehensive income comprises fair-value estimates, a general perception exists that the estimates are driven by estimation error and intentional manipulation (Dhaliwal et al., 1999; Cahan et al., 2000; Lee & Park, 2013). To the extent that an auditor's nomenclature reduces the reliability threat caused by management induced bias for less observable input, investors are more likely to view such fair value earnings as relevant. Thus, the impact of the auditor's reputation on investors' judgments of reliability of accounting data is recognised.

2.4.1.3 Internal Control System

An internal control system (ICS) is an integral part of corporate governance mechanisms that focuses on accounting and other internal control issues of firms. Internal control

often performs a significant task that is relevant to the financial reporting processes of an organization. Due to a series of corporate accounting scandals, such as Enron and Worldcom, the Sarbanes-Oxley Act (SOX) came into existence in 2002 and was designed to improve corporate governance in the United States and to re-establish public confidence and trust in the reliability of financial reporting. For this purpose, the SOX, as per Section 404, requires publicly traded firms to assess and report their internal controls over financial reporting (ICFR) yearly during the fiscal year-end, and simultaneously file an external auditors' report regarding ICFR.

Subsequent to the above, several regulatory regimes, including the Nigerian Code of Corporate Governance (SEC, 2011), Section 31 (31.1), require all companies to establish an effective risk-based internal audit function. Failure to comply with this regulation must be accompanied by a sufficient reason "disclosed in the company's annual report with an explanation as to how an effective internal processes and systems such as risk management and internal control will be obtained" (SEC, 2011, p. 20). This suggests that evaluation of internal control is needed to ensure "the reliability and integrity of financial and operational information" (SEC, 2011, p. 24). To maintain the objectivity of the internal control system, the Act mandates that an internal audit unit report and present details of the adequacy and effectiveness of the unit's operations at audit committee meetings at least once every quarter.

Several studies have examined the impact of internal control systems on the quality, transparency and reliability of financial reporting. Scholarly efforts focusing on the

efficacy of an internal control system have scrutinized its impact by investigating the features of reporting entities disclosing internal control material weaknesses in their ICFR. For instance, Doyle, Ge, and McVay (2007a) found that SOX 302 weaknesses were due to poor accruals quality in years before disclosure, but no evidence was found to support disclosure of SOX 404 weaknesses. Doyle, Ge, and McVay (2007b) revealed that the quality of earnings (accrual) was driven by company-level material weaknesses. Unlike the general perception of increase uncertainty regarding reporting quality when firms disclosure internal control problems, certain material-weakness disclosures may result in a decrease in uncertainty.

Internal control deficiencies have been associated with higher cost of equity capital, greater idiosyncratic risk and systematic risk (Ashbaugh-Skaife, Collins, Kinney, & LaFond, 2008). Interestingly, improvement in the internal controls of firms that previously have disclosed ineffective internal controls under Section 302, exhibit a decrease in the cost of capital. Zhang, Zhou, and Zhou (2007) documented existence of some connections between audit committee quality, auditor independence, and internal control weaknesses in the post-Sarbanes-Oxley Act period. Hammersley, Myers, and Shakespeare (2008) examined the reactions of market participants to the disclosure of internal control weakness. They highlighted that disclosure of the severity of internal control weakness, management's pronouncement of the auditability of internal control weaknesses, and the vagueness of the disclosure are informative in explaining stock price reaction.

Kim and Park (2009) investigated the market reaction to disclosure of internal control deficiencies under Section 302. Such disclosure was negatively associated with abnormal stock returns with changes in market uncertainty. Thus, the impact of the uncertainty reduction is greater for voluntary disclosures of non-material weakness, especially those made in the context of previous suspicious events" (p. 1). A stricter internal control system was found to be negatively associated with intentional manipulation, estimation errors, risk of business strategies and biased management forecasts that affect the quality of reported information (Brown et al., 2014).

Thus, prior studies suggest that a sound internal control system can improve financial reporting quality by reducing the occurrence of accounting irregularities, fraudulent reporting, earnings management, estimation errors, and risk of business strategies. (Doyle et al., 2007b; Penman, 2007; Brown et al., 2014)[17]. Firms without material internal control weakness problems are less likely to have issues related to intentional manipulation, estimation errors, risk of business strategies and biased management forecasts that affect the quality of reported information (Penman, 2007; Brown et al., 2014). This is because a sound internal control system allows the internal audit staff to monitor the preparation of the annual report effectively (Razee, 2004). Penman (2007) and Song et al. (2010) showed the effectiveness of internal control systems in reducing biases of unobservable fair value inputs. If a sound internal control system increases the credibility and reliability of the financial reporting process as claimed by PCAOB, then

[17] Effective implementation and monitoring of internal control systems can assist in detecting and preventing aggressive financial reporting, hence improving financial reporting quality and integrity.

beyond mere regulation, firms complying with stricter internal control regulations in general may provide more reliable accounting information.

Therefore, less-effective internal controls will harm the effectiveness and accounting reliability, suggesting greater costs. Hence, disclosure of no material internal control weakness could improve investors' confidence in fair value earnings such as other comprehensive income. This could suggest that market punishment for reliability concern will be less severe for firms with no material internal control weakness as it reduces market uncertainty. Therefore, to the extent that an internal control system reduces the reliability concern of fair value estimate, an argument can be made that no material internal control weakness may enhance investors' pricing of other comprehensive income.

Summarily, deductive reasoning from the aforementioned sub-sections on audit committee effectiveness, audit reputation and internal control system, can be used to show how corporate governance abets market participants in quality assessment of other comprehensive income. Given the fact that measurement errors for input without observable prices are likely to be more severe as compared to observable inputs in active markets, the impact of corporate governance is expected to be more effective in mitigating problems associated with less observable fair values. Thus, interacting individual variables and corporate governance scores with other comprehensive income and its components will address the criticisms levied against the empirical setup of regressing market value of equities on accounting numbers without substantial proof of

their sources and measurements (Lee, 2001; Holthausen & Watts, 2001; Aboody et al., 2002). Consequently, this understanding could provide useful input to policy makers and international standard setters on reliability factors that enhance the information content of fair value earnings.

2.4.2 Empirical Studies on Fair Value Hierarchy Levels of Measurement

Recent discussions by both the IASB and the FASB are partly centred on the use of fair value accounting for financial reporting across many jurisdictions. This need came about because, unlike historical cost, amortized cost and, among others, fair value seems to meet the conceptual framework criteria of the accounting standards setters. Both IASB and FASB encourage the use of fair value measurements, "definition for fair value, establishes a framework for measuring fair value, and expands disclosure about fair value measurements" (Song et al., 2010, p. 2).

For instance, a consistent definition of fair value was provided by SFAS 157 as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date" (p. 3). The standard is explicit about "exit price" (price received when selling an asset or paid to transfer the liability), not the "entry price" (the price that would be paid to acquire the asset or received to assume the liability). The standard also establishes kinds of valuation techniques that can be used to determine fair value. To enhance consistency and comparability in fair value measurements, SFAS 57 requires reporting entities to disclose their valuation inputs using "fair value hierarchy".

Similar to SFAS 157, the principles of IFRS 7 requires two major disclosures on the: 1) information about the significance of financial instruments and, 2) information about the nature and extent of risks arising from financial instruments (IASB, 2005). This disclosure could relate to the statement of financial position, statement of comprehensive income and other balance sheet/income statement related disclosures. As with SFAS 157, IFRS 7 explicitly classifies valuation inputs into Level 1 inputs (quoted prices in active markets), which is assumed to provide the most reliable evidence of fair value. If quoted prices in active markets are unavailable, a firm can use Level 2 inputs (observable inputs) to value its assets. To the extent that there is no observable market activity for certain assets or liabilities at the measurement date, Level 3 inputs can be utilized. Level 3 inputs are internally generated estimates based on assumptions about how other market participants would price the asset or liability.

Despite the classification of fair value measurement based on the hierarchy, the difficulty of measurement due to subjective estimates when no active markets exist for certain financial instruments greatly militates the use of fair value accounting. For instance, Level 3 inputs are internally generated estimates based on assumptions about how other market participants would price the asset or liability, which greatly militate the use of fair value accounting. The centre of this debate is the trade-off between relevance and reliability. Proponents of fair value accounting argue that fair value information has greater relevance, more accurately reflects real volatility, and simplifies financial reporting process. By contrast, critics of fair value measurement envisage potential manipulation, especially for measurements involving management discretion, particularly

for unobservable and perhaps observable inputs. These challenges suggest information asymmetry between managers and investors, which can threaten the reliability of fair value earnings (Landsman 2007; Penman 2007). The severity of market punishment for reliability trade-off in fair value determination is associated with hierarchy levels of measurement.

Several empirical studies examined the effect of hierarchy level measurement on investors pricing of gains and losses on financial instruments. For instance, Song et al. (2010) and Kolev (2010) examined the relevance of mandated fair value hierarchy information. These studies documented that the value relevance of fair value of Level 1 and Level 2 were greater than that of Level 3 fair values. This evidence supported the intuition that investors could discount fair value measurements that are based on management's subjective estimates. Further analysis by Song et al. (2010) indicated that the value relevance of Level 3 fair values was greater for firms with strong corporate governance. They highlighted that the strength of corporate governance mechanisms influenced fair value hierarchy information, especially for Level 3 fair value. Lu and Mande (2014) did not find statistical significant results for Level 1 and Level 3 fair values. However, Lu and Mande (2014) found that the Level 2 fair value was positive and statistically significantly. Their result was driven by the fineness of disclosures of Level 2 measurements and the frequency of bank's financial instruments measured at Level 2 fair value.

More recently, Goh et al. (2015) extended the study of Song et al. (2010) by increasing the sampling period of the study[18]. They revealed that that all fair values were value relevant. However, value relevance of Level 1 and Level 2 were greater than Level 3 fair value assets. In addition, Goh et al. (2015) revealed a decreased value relevance difference between Levels 1 and 3 over time, especially during the financial crisis of 2008. An evidence of value relevance of fair values across 34 countries that varies in investor protection practices was provided by Siekkinen (2016). By analysing financial firms from these countries, fair values, regardless of the hierarchy level of measurement are value relevant in countries with a strong or medium investor protection environment. Only Level 1 was value relevant in a weak investor protection environment. Interestingly, they documented that the variation in value relevance between Level 1 and Level 3 decreases with the quality of investor protection.

Within the NG-GAAP, there was no equivalent of IFRS 7 (PwC, 2011). By adopting IFRS 7 for financial statement preparation, all public interest companies that first convert to IFRS must adopt IFRS 7 to provide disclosures in their financial statements. This will enable users to evaluate the "significance of financial instruments for the entity's financial position and performance" (PwC, 2011, p. 105). Such disclosure is also important for understanding of the nature and extent of the risks to which a firm is exposed from financial instruments and how those risks are managed (PwC, 2011). Therefore, the shortcomings of fair value accounting and the opportunity given to mangers for classifying financial assets into classes can make fair value hierarchy information in Nigeria an interesting discussion.

[18] Goh et al. (2015) study covers the period from 2008–2011.

2.4.3 Empirical Studies on the Level of Compliance

Compliance with accounting regulations demonstrates a mandatory demand for information that the preparer may not have voluntarily provided (Taylor & Turley, 1986)[19]. The term compliance denotes "the management of regulatory risk − the risk that a rule or regulation will be broken" (Adams, 1994, p. 279), which usually is in the form of financial risk, litigation risk, risk of regulatory engagement and risk of reputation. Accordingly, Tsalavoutas (2009) posited that what is important in the assessment of compliance risk is enforcement in each reporting environment because if enforcement is weak the benefits of non-compliance outweigh regulatory risk (penalty). Given such environment, mandatory disclosure could be treated as voluntary. Thus, if compliance with regulation is optional, IFRS standards that are recognised as principle-based[20], user oriented and internationally acceptable will not lead to high-quality accounting information.

The need for global accounting language has given rise to demands for more internationally comparable financial reporting. One way of achieving this global demand is through harmonization of accounting, a concept aimed at developing a single set of high quality, understandable, enforceable and globally accepted financial reporting standards. In pursuance of this desire, the IASB produced IASs/IFRSs for use by private sector entities throughout the world to promote a more transparent and consistent

[19] Within the realm of accounting, regulation is "the imposition of constraints upon preparation, content and form of external financial reports by bodies other than the preparers of the reports, or the organizations and individuals for which the reports are prepared" (Taylor & Turley, 1986, p. 1).

[20] IFRS places an emphasize on accounting measurements that better reflect a company's economic position and performance (Barth et al., 2008; Kim, 2013).

reporting. Starting 2005, mandatory adoption of IASB standards has witnessed an unprecedented growth. Consequently, debate is ongoing on whether the adoption of IAS/IFRS standards achieves the general assumption of extensive and quality accounting information (Al-Shammari et al., 2008; Al-Akra, Eddie, & Ali, 2010). One important theme in the ongoing debate is compliance with the disclosure requirement regarding IAS/IFRS standards.

To start with, Cairns (1999) demonstrated nine categories of compliance with IAS standards that ranged from full compliance to unqualified description of differences. They revealed that some firms used a mixture of domestic standards and IASs, while others used IASs with stated exceptions. The above submission is similar to what McBarnet (1984) described as "formal compliance", a situation in which firms adopted IASs to gain legitimacy but managers did not fully comply with standards. Street et al. (1999) documented high level of noncompliance in many areas when compliance was examined standard by standard. In follow up research, Street and Bryant (2000) posited that the aggregate level of compliance for standards examined was equal to or less than 75 percent, and that a higher level of compliance was more prevalent for firms with listings in the United States as compared to those with other listings.

In a cross-country research design of six Asia-Pacific countries, Tower, Hancock, and Taplin (1999) examined the degree of compliance with IAS and various determinants of compliance with the IAS rules. When non-disclosure is treated as compliance, an overall high mean of 90.68 percent was achieved, but when non-disclosure was recognised as

non-compliance, a much lower mean of 42.2 percent was computed. They added that the extent of compliance is driven by country-specific factors and not corporate characteristics such as size, leverage, profitability and industry. For instance, Australian firms had the highest level of compliance, whereas Filipino firms had the lowest, and firms that took a longer period to report exhibited lower rates of compliance. A follow up study by Taplin, Tower and Hancock (2002) revealed higher levels of compliance with disclosure issues with a mean of 95.5 percent, which was higher than measurement issues with a mean of 77.7 percent . However, the degree of non-disclosure is driven by standard-by-standard patterns, and the lower rates of non-compliance was found for IAS 7 Cash Flow Statements, IAS 22 Business Combinations and IAS 28 Accounting for Investments in Associates. They concluded that a sample of firms from countries with British colonial affiliation[21] recorded higher levels of disclosure than firms in the Philippines or Thailand.

Further, Street and Gray (2001) revealed substantial deviations in the extent of compliance with IAS disclosures and found that certain corporate characteristics such as listing status, auditor's reputation and country of domicile had significant influence on the compliance level. For firms listed on Germany's New Market for the year 2000 annual reports, Glaum and Street (2003) found that the level of compliance ranged from 100 percent to 41.6 percent with a mean of 83.7 percent. Using the emerging markets context, Al-Shiab (2003) documented low mean compliance scores when compared to other studies examining compliance with IAS disclosure requirements with similar, but not identical accounting systems (Hassan et al., 2006; Al-Shammari et al., 2008). The

[21] These countries include Australia, Hong Kong, Malaysia and Singapore.

level of compliance for these studies ranged from 45 percent to 56 percent. These variations were attributed to specific characteristics of the financial reporting system and the method used to gauge compliance. Therefore, low level of compliance documented for emerging markets are somewhat similar to evidence sourced from the developed nations[22].

Because of the concern about the high level of non-compliance towards the application of IASs, IAS 1 Revised "Presentation of Financial Statements" in 1997 was issued to reinforce the level of compliance. IAS 1 Revised stipulates that financial statements should not be described as complying with IASs unless they comply with all the requirements of each applicable standard and each applicable SIC (Hodgdon et al., 2008). Despite this pronouncement, compliance with relevant accounting standard continues to be an issue. Hodgdon et al. (2008), Hussainey and Walker (2009), and Tsalavoutas (2009) claimed that compliance with IFRS disclosure requirements supported the general submission that a high level of compliance reduces information asymmetry and hence minimizes agency cost. Accordingly, these studies demonstrate a positive impact for higher compliance and an adverse effect for low compliance. These arguments are essentially relevant given the low levels of compliance with the requirements of various standards reported in the previous findings (Tsalavoutas, 2009, Hussainey & Walker, 2009).

[22] Even in the United States and other developed accounting systems in which firms claim higher compliance with IAS standards, significant deviations exist (Hodgdon et al., 2008).

On the face of it, the adoption of IFRS has been a great success. Of the 200 EU companies studied by the ICAEW (2007), 198 disclosed full compliance with IFRS and two disclosed partial compliance. However, the ICAEW findings indicate that the impact of IFRS adoption on companies varies significantly across countries depending on the initial degree of similarity between national GAAP and IFRS. Hodgdon, Tondkar, Adhikari, and Haress (2009) in their study of international compliance documented that compliance with disclosure was positively related to auditor size after controlling for size, profitability, gearing, and international diversification.

Further, Al-Akra et al. (2010) in their study of the influence of accounting disclosure regulation, governance reforms and ownership changes found that disclosure with the IFRS was statistically greater in 2004 than disclosures provided in 1996. However, regulatory reforms produced the most significant impacts on mandatory disclosure, and governance reforms via audit committees showed the most significant determinant of compliance with mandatory disclosure requirements. Mısırlıoğlu et al. (2013) examined the successes of mandatory adoption of IFRS by Turkish listed companies in 2005 with an emphasis on the impact of firm and country level factors. Firm level characteristics such as auditor reputation, firm size, and the degree of foreign ownership substantially affects the degree of disclosures. Evidence of improved disclosure was found, but the clear majority of the disclosure items required by IFRS were not disclosed, due to the poor skills or resources to cope with the new set of accounting standards. Standards relating to fair value, impairment and financial instruments were identified as the most problematic standards for reporting entities.

In summary, the general findings on the advocacy of IAS/IFRS standards since early 2000s was that its adoption would increase value relevance because: 1) it improved disclosure requirement; 2) it is investor based or more market oriented; and 3) IAS/IFRS is likely to curtails negative earnings management (Daske & Gebhardt, 2008). For these reasons, commentators expect increase transparency, comparability and more value relevant financial statements (Daske & Gebhardt, 2008; Barth et al., 2012). Nevertheless, these benefits can only be achieved if reporting entities adopt IAS/IFRS in an actual sense by complying fully with their requirements rather that formal compliance envisaged by McBarnet (1984).

In Nigeria, a dearth of literature exists regarding listed firms' compliance with disclosure requirements of IAS/IFRS standards. To fill this void, this current study examines the level of compliance of firms with IAS 16, IAS 19 and IFRS 7 for firms listed on the NSE market. Because IAS/IFRS standards have more accounting policy choices, the standards differ in application and interpretation compared to the NG-GAAP. This could also suggest more disclosure requirements than the NG-GAAP and also differences. Implementation of IFRS has increased the need within an organization to gather, analyze and report more information to demonstrate compliance with relevant disclosure. Given that fair value gains and losses on non-current assets, gains and losses on available-for-sale financial securities and actuarial gains and losses on defined benefit plans are a product of IAS 16, IAS 19 and IFRS 7, their value relevance would probably be influenced by the disclosure of these standards for firms listed in the Nigerian market.

2.5 Firm-Specific Characteristics (Control Variables)

The salient research question in this study is whether firm-specific characteristics determined the value relevance of comprehensive income reporting in Nigeria. Firm-specific characteristics as referred to in previous studies are those factors that could influence reporting process and subsequently, the value relevance of accounting information. In observance with existing literature, this study will control for firm size, leverage, industry and auditor's reputation, which have been extensively discussed in the previous sections. These variables are reviewed in the following subsections.

2.5.1 Firm Size

Several reasons are discussed in prior studies supporting the intuition that firm size explains the variation in the value relevance of accounting information between firms (Dainelli, Bini, & Giunta, 2013). According to Ota (2001), larger firms have larger book value, earnings and cash flow variables as compared to their smaller counterparts. "The size hypothesis states that the security return response to accounting earnings will be lower (higher) for large (small) firms when explaining security returns" (Habib, 2008, p.11) Also, complexity in terms of size and operation exposes larger companies to the public, and larger companies tend to be more closely monitored by financial analysts and other stakeholders than smaller firms. Consequently, the pressure for larger companies to release information is hypothetically stronger (Ota, 2001). Hence, they resort to more signalling strategies because they can afford disclosure costs of both direct and indirect information compared than smaller firms (Meek, Roberts, & Gray, 1995).

Based on the signalling perspective, the general belief is that the larger the company, the greater the chances of information asymmetry with the existing and potential fund providers (Prencipe, 2004). However, Kim and Yoo (2009) claimed that the greater the firm size, the lower the degree of information asymmetry. Evidence on the role of accounting information on the responsiveness of security prices also suggests that smaller firms are likely to have a better security price response to their release of information, which is consistent with size hypothesis. This is because smaller firms have less pre-disclosure information available for market participants (Habib, 2008).

In the literature, the measure of company size is a multi-faceted variable, often measured as market capitalization (Kim & Yoo, 2009), log of total assets (Habib, 2008; Anandarjan & Hasan, 2010; Kim, 2013), turnover, capital employed, number of shareholders, number of outstanding shares, number of employees and companies average market value (Lang & Lundholm, 2000; Kanagaretnam et al., 2009). All the measures have been used, although market capitalization in the context of value relevance study has enjoyed wide popularity. Moreover, the measure of market capitalization is considered a good representation of the level of firm internationalization and external visibility and a major determinant in the relationship between accounting numbers and stock prices/returns (Chen & Jaggi, 2000; Leventis & Weetman, 2004). Based on the above considerations, the importance of firm size in determining availability of accounting information is established. Thus, controlling for the difference in size among companies to reduce model specification errors is important (Lev, 1989).

2.5.2 Leverage

Generally, financial ratios are extracted from financial statements. As one of four main types of financial ratios, financial leverage (debt-to-total assets ratio) is categorized within the financial structure (Wang, 2009). Financial leverage is a strong predictor of a firm's credit rating and the use of this finance source can assist in increasing profit available to the shareholders. However, if the cash from debt does not raise sufficient profit, then the level of debt will increase the interest payments and consequently increase the riskiness of a firm (Matsa & Kupersmith, 2010). Because of the high external capital finance sources, highly leveraged firms are likely to be closely monitored by lenders and investors and hence provide more detailed accounting information than low leverage firms.

Empirically, Dhaliwal, Lee, and Fargher (1991) claimed that earnings of highly geared firms are less persistent and could result in lower earnings numbers. Consistent with this argument, Habib (2008) documented that the sum of the earnings level and change coefficients were positive and statistically significant for firms with moderate gearing ratios. With regard to the cash flow variables, the sum of the cash flow levels and change coefficients is positive and statistically significant for firms with low leverage ratios. As in the case of earnings, the coefficient of combined cash flows for highly leverage firms declined. These findings may suggest that low leverage firms are likely to have a better security price response to the release of accounting information. It is arguable that more risk can be assumed for the operation of firms with high financial leverage structures.

Therefore, controlling for the effect of leverage on the information content of comprehensive income and level of compliance with the IFRS accounting requirement in a bank focused economy like Nigerian is justified. Leverage is included in this study's regression relating to compliance because the risk level of firms is assumed to play a vital role in providing accounting information (Kothari, 2001). Consistent with the existing literature, leverage in this study is measured as the ratio of debt to total assets (Habib, 2008; Tsalavoutas, 2009; Anandarajan & Hasan, 2010).

2.5.3 Industry

The industry orientation in which a firm is listed can be used as a proxy for signalling effects and the extent of corporate compliance. Wallace et al. (1994) demonstrated that it is common for firms listed in the same sector to follow similar accounting and reporting traditions. On this benchmark, any deviation from what is recognised as a tradition within the industry could mean different signals to the users of accounting information. Thus, theoretical support has been provided that the industry variable can explain the variation in the value relevance of accounting information. A greater compliance level "can be interpreted as companies trying to 'screen' themselves from their peers" (Tsalavoutas, 2009, p. 129) as a way of portraying that they are aligned with the best disclosure practices (Watson, Shrives, & Marston, 2002). Wallace, Choudhury, and Adhikari (1999) suggested that different industries may provide differing details in their financial statements according to certain features of their industries. These reasons could result in different levels of disclosure of accounting transactions between industries and subsequently make the value relevance of certain transactions to be industry dependent.

On the other hand, firms may be viewed as being a “lemon” if the compliance rate is low, resulting in a lower valuation of the market value of equities.

According to Watson et al. (2002), the industry variable is an important factor that can influence disclosure of accounting information. Their finding revealed that companies in the media and utilities industries are less likely to disclose information than those in other industries. Barth and Clinch (1998) documented that the revaluation amounts of plant and equipment were value relevant for a pooled sample and for the mining industry, but property was irrelevant for the full sample and industry sub-samples. Due to a diverse cross section of firms in a given market, it is arguable that components of comprehensive income may not be of equal importance in the valuation process. Barth et al. (1995) and Barth and Clinch (1998) supported the above argument. They posited that unrealized gains and losses on financial assets are the most important components of other comprehensive income when evaluating the financial services industry, whereas the fair value on the non-current assets are more important for the sample of production and industrial firms.

In summary, several studies have documented evidence on the link between the firm level of compliance with accounting disclosures and industry classification. Based on the information available on the website, listed firms are registered as either Agricultural, Conglomerate, Construction, Consumer Goods, Healthcare Services, Industrial Goods, Oil and Gas and Services. Similar to previous studies, a three-digit industry code is used to differentiate the coefficient for the industry listing. This is essential considering

Camfferman and Cooke (2002), who claimed that, when few major firms exist in a given economic environment, firms in the same industry may mimic the disclosure practices of the "leaders". Arguably, the impact of industry classification can be greater in countries like Nigeria with few major firms as compared to the developed countries in which the market has greater breadth. However, for analysis, they are re-classified into the two major sectors of financial and nonfinancial firms similar to Biddle and Choi (2006).

2.5.4 Foreign Liberalization

A huge body of literature has examined the links between different types of ownership and corporate disclosure. One key motivation rests on the fact that corporate disclosures are important for the proper functioning of capital markets. Jensen and Meckling's (1976) seminal paper on the theory of the firm, managerial behaviour, agency costs and ownership structure has no doubt set in motion a broad range of inquisition, which includes ownership structure. Fundamental to Jensen and Meckling (1976) is that ownership structure has a clear bearing on the operating characteristics and performance and hence the reporting quality of firms. A common type of ownership structure is foreign share ownership. Foreign share ownership is particularly important for developing countries due to its implications for attracting foreign investment (foreign share ownership) and the antecedent economic efficiency of a nation as well as articulated monitoring of firm activities (Boubakri, Cosset, Fischer, & Guedhami, 2005; Bokpin, Isshaq, & Nyarko, 2015).

Boubakr et al. (2005) revealed that the degree of foreign equity ownership suggests economic efficiency of local institutions. This implies that the greater the degree of

ownership of equities held by foreign firms, the greater the economic efficiency. Hasan and Marton (2003) explained that foreign ownership introduced competitiveness, which in turn, improved overall performance and efficiency of all indigenous firms. These factors result in increased profit and slashing of operating expenses, suggesting that the presence of foreign equity ownership has a positive impact on domestic counterparts in terms of improved competitiveness and efficiency. Bae and Jeong (2007) documented that the percentage of foreign ownership is associated with strict monitoring of the firm's operation, which translate into increased corporate governance. Overall, these studies conclude that foreign ownership positively influences accounting disclosure, which, in turn, leads to value relevance of accounting information

Contrarily, others have found different results. Abraham (2013) documented that foreign companies listed on the Saudi Arabia stock exchange were more aggressive in terms of loan portfolios, regulatory tier 1 capital and capital structure. However, their aggressiveness did not translate into higher performance. Using cross country data of three African countries (Ghana, Kenya and Nigeria), Bokpin et al. (2015) observed a negative relationship between foreign share ownership and corporate disclosure after taking into consideration unobserved country, time and firm effects. Their sensitivity analysis indicates a high level of persistence of corporate disclosure, but was negatively associated with lag foreign share ownership. In this study, foreign liberalization is controlled for when examining the impact of corporate governance on the value relevance of comprehensive income and compliance with relevant accounting standards.

2.6 Summary

This chapter is predominantly a review of previous related studies to provide a background understanding of the study. The chapter gives a highlight of the Nigerian financial reporting environment and the Nigerian capital market. The empirical literature on the relative value relevance of the traditional net income and comprehensive income and incremental value relevance of other comprehensive income and its components were presented. The chapter also highlights the importance of corporate governance variables, fair value hierarchy information and level of compliance as reliability factors influencing value relevance of other comprehensive income and its components. The review is important as it provides a basis for hypothesis development, model specification and the empirical analysis. The next chapter focuses on the theoretical background of the study.

CHAPTER THREE

THEORETICAL BACKGROUND

3.0 Introduction

Based on the review provided in the preceding chapter, this chapter provides an explanation of a prominent theory (valuation theory) that underpins the relationship between the variables. Because the study further investigates the effect of reliability factors due to agency problems, and the chapter also explores agency theory that links these issues. The chapter also presents hypotheses development and the conceptual framework relating to the research objectives.

3.1 Underpinning Theory

According to Kothari (2001), the interpretation of empirical analysis provides little meaning without theoretical guidance. The first main issue of this study investigates the relative value relevance of net income and comprehensive income as well as the incremental value relevance of other comprehensive income items. Valuation theory is sufficiently used to do so. Because firms will generally strive to align with best practices to reduce the negative consequences of information asymmetry, the study also employed agency theory as a supporting theory. These theories are explored in the following sub-sections.

3.1.1 Valuation Theory

The valuation theory provides a useful benchmark when the study's objective is to investigate how market value summarizes accounting data and other information (Easton

& Harris, 1991; Ohlson, 1995; Holthausen & Watts, 2001; Beaver, 2002). This proposition suggests a linear relationship between accounting numbers and the market value of equities (share price and stock returns). To provide theoretical evidence, different valuation methods such as price and return functions are used and often result in a similar outcomes (Sunder, 1973; Holthausen & Watts, 2001; Damodaran, 2007). For instance, Ohlson's (1995) model of current accounting data and estimates of linear information dynamics demonstrate a valuation implication where the value of a firm is expressed as a function of accounting numbers. As an alternative approach to valuation, Easton and Harris's (1991) return model claims that a firm's value is a function of accounting level earnings and change earnings. This model is based on the idea that, because owners' equity (book value) and market value are both "stock" variables explaining wealth of equity holders, other related flows (earnings) adjusted for dividends should be associated with market value of equity (stock returns).

Theoretically, the two models established a link between accounting numbers and market value of equities, and, when used simultaneously, tend to reduce bias inferences (Kothari & Zimmerman, 1995). On the wave of this interest, studies testing the implication of valuation theory posited that, regardless of the existing spread between the net income and comprehensive income, the two financial performance indicators are significant predictors of the market value of equities (Wang et al., 2006; Brimble & Hodgson, 2008). However, the question of which of the two earnings is superior is still far from being settled among valuation theorists. A good amount of the literature has supported the superiority of net income (Goncharov & Hodgson, 2011; Jones & Smith, 2011; Turen &

Hussiny, 2012; Mechelli & Cimini, 2014; Firescu, 2015; Marchinia & D'Este, 2015). By contrast, Cahan et al. (2000), Biddle and Choi (2006) and Kanagaretnam et al. (2009) documented that comprehensive income reflects firm value better than the net income. More so, the valuation implication of other comprehensive income and its components has been established. However, investors do not price them consistently (O'Hanlon & Pope, 1999; Biddle & Choi, 2006; Wang et al., 2006; Jones & Smith, 2011).

Considering the fact that investors are presented with alternative measures of earnings when reporting under IFRS, one could argue for the greater valuation implication of a more comprehensive measure of earnings. Because of the substantial differences between NG-GAAP and IFRS, this would suggest that comprehensive and its components would be relatively and incrementally value relevant. On the other hand, one could argue that, since the IFRS framework tilts towards fair value accounting, which is prone to creative accounting practices, traditional net income will be viewed as more reliable for firm valuation. This is because a change in accounting standards would not change the behaviour of the preparers of financial statements (Nobes, 2006). If the perception of the investors about the financial statements quality favours the latter assumption of a usual "big bath" instead of genuine changes, it is possible not to identify relative and incremental value relevance of comprehensive income and its components, which is suggestive of a low valuation implication.

One distinctive feature of the price model in testing the valuation implication of accounting numbers is the model's ability to capture "other information" available to the market participants aside accounting numbers. If "other information" is excluded from

the model and implemented in its most common way in the literature, the implication of valuation theory becomes "patently simplistic" (Ohlson, 2001). Studies based on value relevance tests have attempted to explain the presence of events that affect accounting earnings to gauge valuation theory. For instance, some of these studies examined the influence of corporate governance practices on accounting earnings (Penman, 2007; Habib & Azim, 2008; Song et al., 2010). Because other comprehensive income comprises dirty surplus flows that employed different measurement assumption, the threat of information asymmetry is greater, which has a negative impact on market prices (PCAOB, 2011; Lee & Park, 2013). The assumption here is that, through the oversight function, corporate governance practice enhances the quality of fair value earnings. To the extent that the strength of corporate governance mechanism reduces the level of subjectivity and professional judgment in fair value measurement, valuation theory makes a case that rational investors will price other comprehensive income accordingly (Aboody et al., 2006; Habib & Azim, 2008; Bhat, 2009; Song et al., 2010; Lopes & Walker, 2012; Lee & Park, 2013).

Another stream of studies on valuation theory has indicated that the level of compliance with the measurements of financial assets and liabilities affects market prices. It is a common debate that management estimation error and intentional error associated with fair value measurements might threaten investors' perception of reliability of fair value earnings (Song et al., 2010; Lee & Park, 2013). Because comprehensive income includes several dirty surplus flows measured using different levels of information hierarchy, investors are less likely to have the capacity to verify the reliability of such estimates

(PCAOB, 2011; Lee & Park, 2013). To the extent that investors perceive that managers might introduce intentional biases in their estimations, they are likely to place different weights across levels of fair value measures (Maines & Wahlen, 2006; Song et al., 2010; Lee & Park, 2013). Thus, assets and liabilities measured at Level 3 and perhaps Level 2 are most likely to exhibit a lower preference in equity valuation as compared to Level 1 (Song et al., 2010; Lee & Park, 2013; Lu & Mande, 2014). Nevertheless, the effectiveness of independent and competent monitors determines the value relevance of the hierarchy of information (Aboody et al., 2006; Penman, 2007). This suggests a difference in the valuation of fair value hierarchy information across weak and strong corporate governance firms.

Finally, studies such as Hope (2003) and Hussainey and Walker (2009) posit that the level of compliance has valuation effects. NG-GAAP did not require disclosures of comprehensive income and the quantity of disclosure is not as substantial as those required by the IFRS (NASB, 2010; ROSC, 2011). In practice, companies provided very limited notes to their financial statements (ROSC, 2011). If the new accounting framework (IFRS) is properly enforced, this framework would provide more complete information to investors (NASB, 2010, PwC, 2011). Because the level of information provided is a reflection of a firm's closeness to best practices, this would also make the level of disclosures value relevant (Tsalavoutas, 2009). This suggests some valuation implication because investors in the NSE market might consider the level of compliance when assessing their investment options and might price accounting earnings differently

across high versus low compliance firms. On this ground, valuation theory is appropriate in explaining the value relevance of earnings and effect of other information.

3.1.2 Agency Theory

A relationship that is fraught with conflicting interests in corporate operation is the principal-agent relationship (Jensen & Meckling, 1976; Morris, 1987). Jensen and Meckling (1976) postulate agency relationships as:

> "a contract under which one or more persons (principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (p. 308).

This proposition asserts that a corporate entity has a set of contracts among various parties who have a common interest (Tsalavoutas, 2009). Because of the separation of ownership and control, agency cost claims that a potential conflict of interest exists if an assumption is made that maximization of personal benefit is the main target of each individual. This possibility is the foundation of the agency theory "which is concerned with the mechanisms that ensure that actions that benefit the managers also benefit companies" (Tsalavoutas, 2009, p. 86).

Under incomplete information and imperfect market conditions (Eisenhardt, 1989), agents whose responsibility is to run and prepare financial statements may use the advantage of being more informed than investors to misrepresent information to achieve certain performance targets (Jensen & Meckling, 1976). For this reason, two imperative

implications could be assumed. First, because agents are autonomously empowered in taking decisions, the principal bears the risks of uncontrollable actions of the agent, which sometimes do not lead to outcomes that are in the best interests of the principal (moral hazard problem). Second, because the principal has lost control and relatively autonomous decisions are vested in the agent, the principal is not fully informed about the optimality of management's decisions (adverse selection problem). These information asymmetries induce agency costs (Song et al., 2010; Lee & Park, 2013), and the consequences could manifest themselves as either agency costs of equity or agency costs of debt (Morris, 1987). The two scenarios create distrust between the managers and the investors (Yasin & Nelson, 2012), deteriorate capital market efficiency and fairness (Levitt, 2000; Francis & Michas, 2013) and threaten the reliability of accounting information to investors (Fields et al., 2001; Holthausen & Watts, 2001). Therefore, the needs for agency theory seem more sensitive with respect to capital market fairness for the protection of the investors.

According to Morris (1987), agency costs of equity occurred as a result of the loss of firm value when the agents failed to pursue optimal decisions (adverse selection problem) from the principal's point of view. Agency costs of equity also relate to the costs of bonding and monitoring managers so that actions of agents are aligned with those of the principal, particularly in the present reporting environment that tilts towards fair value accounting (Song et al., 2010; Lee & Park, 2013). Agency costs could be reduced through monitoring procedures, including the production of accounting reports and effective

governance practice (Morris, 1987; Maines & McDaniel, 2000; Song et al., 2010; Lee & Park, 2013).

Based on previous studies, agency cost theorists have expressed their concern that managerial judgment and discretion may lower the quality of fair value earnings as valuation input (Maines & McDaniel, 2000; Song et al., 2010; Lee & Park, 2013). This may suggest that such earnings are less important to market participants because they are less verifiable by investors (Song et al., 2010; Lee & Park, 2013). Moreover, because investors are rational about value creation, non-compliance with disclosure requirements will also create information asymmetry, especially for unobservable and perhaps observable inputs (Bhat, 2009; Tsalavoutas, 2009; Hussainey & Walker, 2009; Song et al., 2010; Lee & Park, 2013). Overall, concern for reliability for fair value accounting assets and liabilities may be greater where a high level of information asymmetry exists, hence creating agency cost problems.

Nonetheless, expectations about long-run "pay off" for maintaining corporate reputation, the right to corporate resources (Jensen & Ruback, 1983), the threat of hostile acquisitions (Coughlan & Schmidt, 1985), and a higher valuation of a firm's share prices (Benston, 1982) may act as incentives for managers to adopt best practices. From this reasoning, the argument may be made that effectiveness of corporate governance mechanisms and increased disclosures could mitigate agency costs induced from information asymmetries. Thus, management has incentives to put in place strong corporate practices and to provide a high level of compliance with IFRS mandatory

disclosures to enhance the perception of investors about the reliability of other comprehensive income and its components.

3.2 Hypotheses Development

According to Zikmund, Babin, Carr, and Griffin (2010), a hypothesis is a formal statement explaining some outcome. The rationale for developing a research hypothesis is to enable the researcher to test, verify and explain the nature of a relationship that exists between variables that are proposed in the research framework (Zikmund et al., 2010). This study develops a series of hypotheses to test the implications of valuation theory and agency theory. To be exact, this study develops hypotheses about 1) the relative value relevance of net income and comprehensive income, 2) the incremental value relevance of other comprehensive income and its components relative to the net income, 3) the influence of corporate governance mechanisms on the value relevance of other comprehensive, 4) the fair value hierarchy information, and 5) the effect of compliance on the value relevance of other comprehensive income items as follows:

3.2.1 The Relative Value Relevance of Net Income and Comprehensive Income

The literature underscores earnings as an important source of information to investors because it represents a firm's real performance (Subramanyam, 2014). The implication of valuation theory is that accounting earnings is a good indicator of future cash flows and subsequently increased share prices and returns (Holthausen & Watts, 2001; Beaver, 2002). Based on these intuitions, the utility of information content of net income and comprehensive income have been tested, but homogeneous results have not been

established (Kanagaretnam et al., 2009; Turen & Hussiny, 2012; Mechelli &. Cimini, 2014; Firescu, 2015; Marchinia & D'Este, 2015).

Amongst the early studies on this wave of interest, Cheng et al. (1993) showed that net income is more value relevant than comprehensive income based on the R^2 of the competing variables. Dhaliwal et al. (1999) and O'Hanlon and Pope (1999) documented mixed results. While net income was more strongly associated with market value, no clear evidence was found that the alternative income measure was more strongly associated with returns for samples of firms in the United States and United Kingdom. O'Hanlon and Pope (1999) claimed that, in line with the general intuition of increased clarity and transparency of comprehensive income reporting, reporting other comprehensive income items reduced creative accounting among United Kingdom firms. Similarly, more recent evidence equally demonstrates that net income tends to represent more relevant information than does comprehensive income (Goncharov & Hodgson, 2011; Jones & Smith, 2011; Turen & Hussiny, 2012; Mechellia & Cimini, 2014; Firescu, 2015; Marchinia & D'Este, 2015).

By contrast, the dominance of comprehensive income over net income has also been documented. In New Zealand, Cahan et al. (2000) found evidence to support the dominance of comprehensive income. Barth and Beaver (2001) revealed that comprehensive income is better than the traditional net income when the objective is to forecast the profitability of firms. Biddle and Choi (2006) and Kanagaretnam et al. (2009) found that a more comprehensive measure of earning was more strongly associated with

stock prices and returns compared to traditional income measurement for firms in the United States and Canada respectively. One viewpoint of these studies is that comprehensive income is essential to investors as it combines the earnings from operating performance and earnings generated from fair value adjustment between the end and the beginning balance sheet values. The differences in the result of previous research could be due to the differences in datasets such as the use of "as if" and actual reported data, variations in research design, jurisdictions and time coverage.

Like many other national accounting bodies, the Nigerian Financial Reporting Council (NFRC) mandated reporting of all-inclusive comprehensive income effective from 2012 onwards. This pronouncement required firms to mark-to-market certain assets and liabilities in corporate financial statements. So far, results from other countries discussed in this section are quite new in Nigeria and have not been tested to the best of this researcher's knowledge. Prior value relevance studies in Nigeria are based on the summary measure of the book value of equity, earnings per share and cash flow from operations before the adoption of IFRS (Mgbame & Ikhatua, 2013; Olugbenga & Atanda, 2014; Enofe et al., 2014; Ernest & Oscar, 2014). Because the direction of hypothesis cannot be drawn from Nigerian context, this study follows prior studies that documented dominance of net income over comprehensive income. This selection is informed because net income is permanent earnings that result only from core-business activities. Therefore, the following premise is hypothesised as:

H_{1a}: Net income is more value relevant than comprehensive income in the Nigerian capital market.

Furthermore, international accounting literature, on average suggests that mandatory IAS/IFRS adoption improved the information quality of accounting earnings. This was due to the simultaneous effect of IAS/IFRS on a large number of firms, enhanced investors' ability to understand the link between accounting amounts and economic outcomes and more consistent application and enforcement (Barth et al., 2012) IAS 1 Revised on the presentation of financial statement focuses on comprehensive income reporting. However, the IAS 1 Revised only mandated that comprehensive income be disclosed in a specific format, but did not change the economic substance of other comprehensive income. It is possible that the enforcement of IAS 1 would not lead to value relevance of comprehensive income because all information required to calculate it already available in the financial statements. Using samples of New Zealand and the European continent, Cahan et al. (2000) and Mechelli and Cimini (2014) found no evidence of the incremental value relevance of comprehensive income when it was made mandatory.

On the other hand, IAS 1 Revised may have improved the value relevance of comprehensive income because of the increased clarity and transparency. Based on the argument that information will only be used when it is both available and readily processable, Hirst and Hopkins (1998) documented that investors are better able to estimate financial performance information when the information is disclosed in a

comprehensive income statement than in the statement of changes in shareholders' equity. Chambers et al. (2007) argued that the mandatory comprehensive income reporting improves the value relevance of comprehensive income, not because it changes the information disclosed, but because it reduces the risk of losing relevant information. Khan and Bradbury (2014) found evidence pointing to the advantages of mandatory comprehensive income reporting, adding that it reduces the information-processing costs and opportunity for earnings management. Marchini and D'Este (2015) documented that mandatory reporting of comprehensive income was of particular relevance for Italian firms considering the wide use of the historical cost accounting model and concentrated ownership of listed public firms.

Given the weakness of the NG-GAAP regarding limited disclosure of accounting information and non-compliance with regulations as NASB (2010), ROSC (2011) and Okaro et al. (2013) identified, mandatory comprehensive income reporting could mean an increased level of disclosure in the Nigerian capital market. Thus, the increase demand for quality disclosure and differences between NG-GAAP and IAS/IFRS in regards to other comprehensive income items could suggest increase the value relevance of comprehensive income. Hence, valuation of comprehensive income could vary between the voluntary regime when dirty surplus flows are disclosed in the footnotes to accounts or other sources and recognised directly to the shareholders' equity as compared to mandatory regime when such dirty surplus flows are adjusted in the net income and presented clearly and in a precise manner in a statement of comprehensive income. Relying on previous studies that suggest investors are more likely to use financial

information when it is presented in a clear and simple manner, these reasons lead to the following hypothesis:

H_{1b}: The value relevance of comprehensive income in the mandatory regimes is greater than the voluntary regime in the Nigerian capital market.

3.2.2 The Incremental Value Relevance of Net Income and Other Comprehensive Income and its Components

Prior literature has also highlighted the valuation implications of other comprehensive income. O'Hanlon and Pope (1999) claimed that, even though the total and other comprehensive income are fair value items, investors do not price them consistently. Wang et al. (2006) suggested that accumulated dirty surplus flows (other comprehensive income) of up to 10 years were found not be associated with stock returns. Jones and Smith (2011) found that other comprehensive income was value relevant, but displayed negative persistence and had a weaker predictive power. Using the measurement approach[23], the results indicate that incremental information of other comprehensive income was only driven by unrealised available-for-sale securities (Goncharov & Hodgson, 2011). Fasan et al. (2014) examined how the implementation of revised IAS 1 has affected the extent to which the market takes other comprehensive income into account. Using an extensive data set covering firms in 19 countries from 1995 to 2010, they documented value relevance of other comprehensive income for continental Europe. Mechelli and Cimini (2014) documented an incremental value relevance of other

[23] The measurement approach was considered more appropriate for Continental European firms who operate in less developed secondary stock markets and measurement approach is more attune with the qualitative relevance objectives of standard setters.

comprehensive income, but this was continuously lower as compared to traditional net income.

The above review suggests a conflicting conclusion on the value relevance of other comprehensive income. This mixed result is probably due to the differences in the data sets, model specifications, industry factors, sample period and differences in specific items of comprehensive income among countries. Prior to 2012, the NG-GAAP did not require disclosure of other comprehensive income and its items in a separate component of a financial statement. As highlighted in section three of this paper, the substantial difference that exists between the NG-GAAP and IFRS in terms of measurements and recognition of other comprehensive income items makes NSE market a good setting to test the incremental value relevance of other comprehensive income. Principally, these innovations could mean greater earnings quality and an increased level of disclosure to participants in the NSE market. However, given the infrequent nature of other comprehensive income items and the subjectivity in its determination, it is possible that investors may attach less importance to it as compared to the net income. For this reason, it is hypothesised that:

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

While literature has highlighted that broader definitions of income are more useful for investment decisions, such an assumption is not the case for other comprehensive income

items (Biddle & Choi, 2006). Using a sample of firms in the United Kingdom, O'Hanlon and Pope (1999) found that the pricing of other comprehensive items differs between investors. For instance, Chamber et al. (2007), Missonier-Piera (2007), and Hlaing and Pourjalali (2012) documented that fair value gains and losses on the non-current assets are important inputs for firm valuation. These studies are based on the premise that re-valuing the carrying amount of a class of non-current assets, other than by way of depreciations, enables firms to account for fair values changes between the end and beginning periods to reflect true financial and economic situation. Thus, fair value gains and losses on the non-current assets could be employed as valuation input for assessing the market value of a firm. However, a revaluation of property, plant, and equipment was also found to be less consistent (Barth & Clinch, 1998) and less useful in explaining share prices (O'Hanlon & Pope, 1999).

Moreover, previous studies on the incremental value relevance of unrealized gains and losses on available-for-sale securities contend that re-measuring financial assets is designed to inform investors about the underlying market value of a firm's financial assets (Dhaliwal et al., 1999; Chambers et al., 2007; Kanagaretnam et al., 2009). Barth et al. (1995) revealed that unrealized gains and losses on financial assets were the most important for firms in the financial services industry as were gains and losses from non-current assets for production and industrial firms. Of the three other comprehensive income items examined, only the available-for-sale marketable securities adjustment explains the association between earnings and returns in the study of Dhaliwal et al.,

(1999)[24]. Kanagaretnam et al. (2009) revealed that available-for-sale and cash flow hedges components were significantly associated with price and market returns. By contrast, Barth (1999), Mitra and Hossain (2009) and Kubota et al. (2011) found that fair value gains and losses on marketable securities were negatively associated with the market value of equities.

From the investors' view point, Mitra and Hossain (2009) and Jones and Smith (2011) considered actuarial gains and losses to be value relevant. However, Dhaliwal et al. (1999) came to the opposite conclusion. 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, the irrelevance of fair value of plan assets and liabilities documented in Dhaliwal et al. (1999) could be justified.

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 other comprehensive income, such as fair value gains and losses on non-current assets (REV),

[24] Based on the return/earnings association approach, Dhaliwal et al. (1999) investigated whether adjusting net income for foreign-translation adjustment increases the association of earnings with returns. They found no evidence that adding the foreign translation and pension adjustments to net income affects the return/earnings association.

fair value gains and losses on available-for-sale marketable securities (SEC) and actuarial gains and losses on pension plan (PEN) in the NSE market are expected to provide incremental information. However, given their transitory nature, they are also expected to be lower than traditional net income. In line with the above argument, the following premise is expected to be verified:

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H_{2b}: *The components of other comprehensive income provide incremental value relevant information, but with a coefficient lower than traditional net income in the Nigerian capital market.*

The examination of value relevance of earnings for voluntary and mandatory reporting of accounting amounts is well ingrained in the literature. The pre- and post-IAS 1 periods have garnered diverse levels of debates because of the differences between domestic GAAPs and IAS/IFRSs with regard to comprehensive income reporting. In judging management and corporate performance, nonprofessional investors do not take into account other comprehensive income in a statement of stockholders' equity, but valued those presented in a statement of comprehensive income (Maines & McDaniel, 2000). While Dhaliwal et al. (1999) found no evidence that other comprehensive income reflects stock returns than net income, Chambers et al (2007) found other comprehensive income value relevant. The two studies used a sample of United States' firms and the same methodology, but Dhaliwal et al., 1999 used pre-SFAS 130 and Chambers et al. (2007) used post-SFAS 130 data. The variation in their findings lends credence to the disclosure method for other comprehensive income for different accounting frameworks.

The findings of O'Hanlon and Pope (1999) suggested that allowing value-relevant flows to pass reported earnings reduced creative accounting activity for the sample of United Kingdom firms. Their position seems to support the all-inclusive income approach of earnings measurement ingrained in IAS 1. Cahan et al. (2000) revealed that other comprehensive income provides better incremental information over traditional net income, but no benefit exists for reporting a separate comprehensive income type statement. Wang et al. (2006) and Brimble and Hodgson (2008) documented that accumulated dirty surplus flows for samples of Australian and Dutch listed firms were not value relevant. However, reporting other comprehensive income at least provides more reliable information that could reduce the political and liability costs of auditors (Wang et al., 2006). Fasan et al. (2014) in their cross-country study of firms in 19 countries revealed an increase in the value relevance of other comprehensive income in the post-IAS/IFRS in 2005 and IAS 1 Revised in 2009. They added that investors in continental European markets did react to the introduction of the IAS/IFRS, consequently other comprehensive income value relevance increased, especially in countries in which the divergence between domestic GAAPs and IAS/IFRS were the highest.

However, being an additional financial performance indicator and measure using different assumptions from old NG-GAAP, it is expected that the incremental value relevance of other comprehensive income could increase in the mandatory regime. In the mandatory comprehensive income regime, firms are required to disclose other comprehensive income separately. This may, according to the reporting location

literature, increase the transparency of financial reporting process. To investigate this intuition, the following hypothesis is posited.

H_{2c}: *The value relevance of other comprehensive income in the mandatory regime is greater than the voluntary regime in the Nigerian capital market.*

3.2.3 The Influence of Corporate Governance on the Value Relevance of Other Comprehensive Income

While the valuation effect of other comprehensive income has been recognised in the extant literature, such accounting will "provide the opportunity for managers to manage earnings by selectively including realized gains in earnings and selectively excluding unrealized losses from earnings'' (FASB, 1993, p. 12). This is typically because other comprehensive income includes several "mark-to-market and mark-to-model" types of adjustments. When the degree of judgment and subjectivity in estimating fair-value estimates is high, it increases the dissenting concern about the reliability of such estimates (Maines & McDaniel, 2000; Song et al., 2010; Lee & Park, 2013). Consequently, actual results could differ materially from the estimates, hence creating additional challenges for users' and auditors of financial information (PCAOB, 2011; Christensen et al., 2012; Lee & Park, 2013). This agency cost of information asymmetry is proven to be mitigated through effective corporate governance practices and market participants price the strength of corporate governance in investment analysis (Maines & Wahlen, 2006; Song et al., 2010; Lee & Park, 2013).

Because other comprehensive income includes several dirty surplus flows measured using different level hierarchy information, investors are less likely to have the capacity to verify the reliability of such estimates (PCAOB, 2011; Lee & Park, 2013). Nevertheless, previous evidence documented enhanced quality and reliability of financial information when external auditors are involved in the financial reporting process (Ismail & Chandler, 2005; Francis & Wang, 2008; DeFond, 2010; Francis & Michas, 2013; Lee & Park, 2013). As such, market participants could place different weights for an accounting number audited by Big 4 and non-Big 4 firms because of the perception that Big 4 firms produce higher-quality audits than non-Big 4 firms (Francis & Michas, 2013; Lee & Park, 2013). These assumptions make the nomenclature of Big 4 an effective corporate governance mechanism for capital markets operations (Francis & Michas, 2013; Lee & Park, 2013, Francis & Michas, 2013). Lee and Park (2013) revealed a significant valuation differences for more subjective items of comprehensive income when conditioned for Big 4 and non-Big 4 audit firms. It is, therefore, arguable that involvement of external auditors could influence the investors' pricing of other comprehensive income in Nigeria.

More so, the audit committee, a vital corporate governance oversight function, may have a disciplining effect on the management's discretion in the fair value determination. Several regulatory and legislative reforms such as the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees (BRC) 1999 and Sarbanes Oxley-Act 2002 underscore the importance of best practices of audit committees in financial reporting quality. For instance, the proportion of independent non-executive

directors to the total number of directors sitting on the boards has been positively associated with the comprehensiveness of financial disclosure (Chen & Jaggi, 2000) and negatively associated with earnings management (Klein, 2002; Jenkins, 2003) and more reliable reported earnings (Woidtke & Yeh, 2013). By contrast, Rainsbury et al. (2009) and Suárez et al. (2013) revealed that the proportion of independent directors did not enhance the quality of financial reporting.

The frequency of audit committee meetings gives the committee members ample time to review internal control systems and a firm's overall audit process to ensure good financial reporting quality (Barua et al., 2010; Woidtke & Yeh, 2013). In related studies, the frequency of audit committee meetings was found to be negatively associated with discretionary current accruals (Xie et al., 2003) and more likely lead to updating members on current auditing issues and members were more diligent in fulfilling their duties (Yasin & Nelson, 2012).

Furthermore, the presence of financial and auditing experts sitting on an audit committee leads to higher quality financial statements. The financial expertise of audit committee members seems to be a fundamental factor in monitoring and forestalling earnings management and financial restatements (Xie et al., 2003; Agrawal & Chadha, 2005). Davidson et al. (2004), DeFond et al. (2005), and Woidtke and Yeh (2013) observed a positive stock market reaction to good news management forecasts for firms with financial and audit expertise on their audit committee. Experts sitting on these

committees are effective at reducing internal control problems and inefficiency in financial reporting (Naiker & Sharma, 2009; Yasin & Nelson, 2012).

In the same vein, effective implementation and monitoring of internal control systems can assist in detecting and preventing aggressive financial reporting, hence improving financial reporting quality and integrity (Razee, 2004; Kim & Park, 2009). Firms without material internal weakness problems are less likely to have issues relating to estimation errors, intentional manipulation and biased forecasts by management that affect the quality of reported information (Brown et al., 2014). This is because a sound internal control system allows the internal audit staff to monitor the preparation of annual report effectively (Razee, 2004).

Penman (2007) showed the effectiveness of internal control systems in reducing biases with unobservable fair value inputs. Hence, disclosure of no material internal control weakness could improve the confidence of an investor with respect to fair value earnings such as other comprehensive income. Overall, the influence of an auditor's reputation, audit committee characteristics and an internal control system is unequivocally important in addressing the agency cost of information asymmetry. Thus, if the assumption is made that the strength of corporate governance mechanism reduces the level of professional judgment involved in fair value measurement, one might expect enhanced reliability of other comprehensive income. It is therefore hypothesised that:

H_{3a}: *The strength of the corporate governance positively influences the reliability of other comprehensive income in the Nigerian capital market.*

H_{3b}: *The individual element of corporate governance positively influences the reliability of other comprehensive income in the Nigerian capital market.*

3.2.4 The Value Relevance of Fair Value Hierarchy Levels of measurement and Influence of Corporate Governance Matters

In recent years, the evolution of the financial reporting framework has tilted towards fair value accounting. However, several arguments have been put forward concerning managerial discretions in the determination of other comprehensive income. Because some markets and certain financial assets and liabilities are illiquid, managers adopt different valuation methods in determining their fair value. The flexibility in the choice of valuation methods may induce managers to report information that is technically within GAAP, but not representationally faithful for the accounting transaction (Maine & Wahlen, 2006; Elliot, Jackson, & Smith, 2006). Dahmash, Durand, and Watson (2009) and Richardson, Roubi, and Soonawalla (2012) claimed that an arbitrary choice of financial reporting method had valuation implications because that choice impairs the reliability of accounting information. For example, Dhaliwal et al. (1999) claimed that some components of comprehensive income may add noise to financial reporting due to the subjective estimates involved, and the value relevance has been conditioned on the magnitude of management's assumptions and judgments (Lee & Park, 2013). Thus, this argument reflects a form of distinction in investors' pricing of dirty surplus items given a measurement hierarchy.

Based on the IFRS 7 on improving disclosure of financial instruments, preparers must determine the appropriate fair value hierarchy from Levels 1 to 3 for certain financial assets and liabilities. While the measurement inputs for Level 1 is based on quoted prices in active marketplaces, Levels 2 and 3 are based on observable and unobservable inputs (Kanagaretnam et al., 2009; Song et al., 2010; Lee & Park, 2013). Thus, items such as gains and losses on non-current assets and pension-liability adjustments that are often used in Levels 2 and 3 measurements may be considered less reliable as compared to re-measuring available-for-sale financial assets that often used Level 1 (Song et al., 2010; Lee & Park, 2013).

The above position implies that, the higher the level of subjectivity in measuring accounting earnings, the greater the information asymmetry problems and reliability concerns. When investors have perceived subjectivity in the fair value determination to be greater, they may price fair value gains and losses differently across levels (Penman, 2007; Song et al., 2010; Lee & Park, 2013). This suggests that fair value gains and losses at Level 3 (less reliable) are likely to be discounted by investors in their valuations of firms. As a deterrent to managerial deviations, corporate governance mechanisms can play a vital role in ameliorating the information asymmetry issues inherent in Level 3 and perhaps Level 2 fair value measure.

Like the practice in the other reporting environment, adoption of IFRS requires firms in the NSE market to measure and disclose dirty surplus accounting flows based on fair value hierarchy (PwC, 2011). Given investors' experiences with creative accounting

practices in the NSE market (NASB, 2010; ROSC, 2011; Okaro et al., 2013), it is arguable that fair value hierarchy will determine the perceived reliability of other comprehensive income items. Again, because the reliability of other comprehensive income items decreases as fair value hierarchy descend from Level 1 towards Level 3, it can be argued that corporate governance practices may mitigate reliability concerns for fair value earnings. It is therefore hypothesised that:

$H_{4a:}$ *The reliability of other comprehensive income items decreases when fair value hierarchy descends from Level 1 towards Level 3 in the Nigerian market.*

$H_{4b:}$ *The decrease in the reliability of other comprehensive income items when fair value hierarchy descends from Level 1 towards Level 3 is influenced by the corporate governance mechanisms in the Nigerian market.*

3.2.5 The Influence of Compliance Level on the Value Relevance of Components of Other Comprehensive Income

Prior studies have suggested that an increased level of disclosure have a positive valuation implication and reduces the agency cost of information asymmetry (Nobes, 2006; Maines & Wahlen, 2006). In terms of the disclosure requirement, a significant difference exists between the NG-GAAP and IFRS frameworks. Many standards such as IAS 16 (Revaluation of Property, Plant and Equipment), IAS 19 (Employee Benefits) and IFRS 7 (Financial instruments: Disclosures) require firms to disclose the assumptions used in determining fair value gains and losses on non-current assets (REV), actuarial gains and losses on pension plan (PEN) and fair value gains and losses on available-for-

sale marketable securities (SEC). Detailed disclosure of these assumptions improves transparency and subsequently affects user's perceptions of the financial statements regarding the prospects of the reporting entity (Hope, 2003). Furthermore, greater compliance provides insights on the assumptions and accounting policy choices used to determine the recognised and measurement of accounting items. Thus, greater compliance provides more transparent financial statements, which, in turn, reduces the uncertainty of the accounting transactions and could constrain some potentially harmful managerial actions (Hope, 2003).

To the extent that the level of compliance provides relevant information about a company's prospects, levels of disclosures should be associated with market values (Hussainey & Walker, 2009), reduce analyst forecast errors and enhance the predictive power of earnings (Goncharov, Werner, & Zimmermann, 2006; Hodgdon et al., 2008). So far, evidence in the literature regarding compliance mostly concerns voluntary disclosures (Tsalavoutas, 2009). Thus, the implication of mandatory disclosures is not "theoretically and heavily debated" (Bushee & Leuz, 2005, p. 236). In both the international arena and from the context of the present study, these arguments are essentially relevant considering the low levels of compliance with the requirements of various standards reported in the previous findings (Hodgdon et al., 2008; Hussainey & Walker, 2009).

Accordingly, a higher level of compliance suggests greater levels of "disclosure of both proprietary and non-proprietary information and/or both good and bad news" (Leuz &

Wysocki, 2008; Tsalavoutas, 2009). Reporting firms that wish to reduce agency costs of information asymmetry have the opportunity to communicate their practices in a more transparent manner way by providing detailed information. By implication, a positive impact can be assumed for higher compliance, whereas a negative impact may be assumed for low compliance. Because several creative accounting practices have taken place in Nigeria some due to the low disclosure requirements (NASB, 2010; ROSC, 2011), it is expected that implementation of IFRS will underscore more a detailed disclosure that will improve the country's financial reporting system, and earnings will be more positively priced. For these reasons, the following two hypotheses are tested.

$H_{5a:}$ Compliance with IAS 16, IAS 19 and IFRS 7 is value relevant in the Nigeria market.

$H_{5b:}$ Compliance with IAS 16, IAS 19 and IFRS 7 significantly influence the reliability of other components of comprehensive income in the Nigerian market.

3.3 Summary of Research Question, Hypotheses and Theory

Table 3.1 presents a summary of the research objectives, hypotheses and theories guiding this study. Two hypotheses regarding the relative value relevance are developed to answer research question 1. Three hypotheses are developed to test the incremental value relevance. Two hypotheses are postulated to test the effect of corporate governance mechanisms on the value relevance of other comprehensive income. Another two hypotheses are developed to investigate reliability test of fair value hierarchy of other comprehensive income items and the role of corporate governance mechanisms. Finally, two hypotheses are stipulated to test whether compliance with IAS 16, IAS 19 and IFRS

Table 3.1
Summary of Research Questions, Hypotheses and Theories

Research Questions		Hypothesis		Theories
Q1	Does the traditional net income provide more value relevant information than comprehensive income?	H_{1a}	Net income is more value relevant than comprehensive income in the Nigerian capital market	Valuation theory
		H_{1b}	The value relevance of comprehensive income in the mandatory regimes is greater than the voluntary regime in the Nigerian capital market.	Valuation theory
Q2	Do the other comprehensive income and its components provide incremental information beyond traditional net income?	H_{2a}	Other comprehensive income provides incremental information, but with a coefficient lower that the traditional net income in the Nigerian capital market.	Valuation theory
		H_{2b}	The components of other comprehensive income provide incremental value relevant information, but with a coefficient lower than the traditional net income in the Nigerian capital market.	Valuation theory
		H_{2c}	The value relevance of other comprehensive income in the mandatory regime is greater than the voluntary regime in the Nigerian capital market.	Valuation theory
Q3	Does the corporate governance influence the value relevance of other comprehensive income?	H_{3a}	The strength of the corporate governance positively influences the reliability of other comprehensive income in the Nigerian capital market	Valuation theory
		H_{3b}	The individual elements of corporate governance positively influences the reliability of other comprehensive income in the Nigerian capital market	Valuation and agency theory
Q4	Does the reliability of fair values decrease when fair value hierarchy descends from Level 1 towards Level 3 and does corporate governance matter?	H_{4a}	The reliability of other comprehensive income items decreases when fair value hierarchy descends from level 1 towards level 3 in the Nigerian market.	Valuation and agency theory
		H_{4b}	The decrease in the reliability of other comprehensive income items when fair value hierarchy descends from Level 1 towards Level 3 is influenced by the corporate governance mechanism in the Nigerian market.	Valuation and agency theory
Q5	Does the level of compliance with IAS 16, IAS 19 and IFRS 7 impact the value relevance of components of other comprehensive income?	H_{5a}	Compliance with IAS 16, IAS 19 and IFRS 7 is value relevant in the Nigeria market.	Valuation and agency theory
		H_{5b}	Compliance with IAS 16, IAS 19 and IFRS 7 significantly influence the reliability of other components of comprehensive income in the Nigerian market.	Valuation and agency theory

7 are value relevant and whether they influence value relevance of other comprehensive income items in the Nigerian capital market as summarized in the table above.

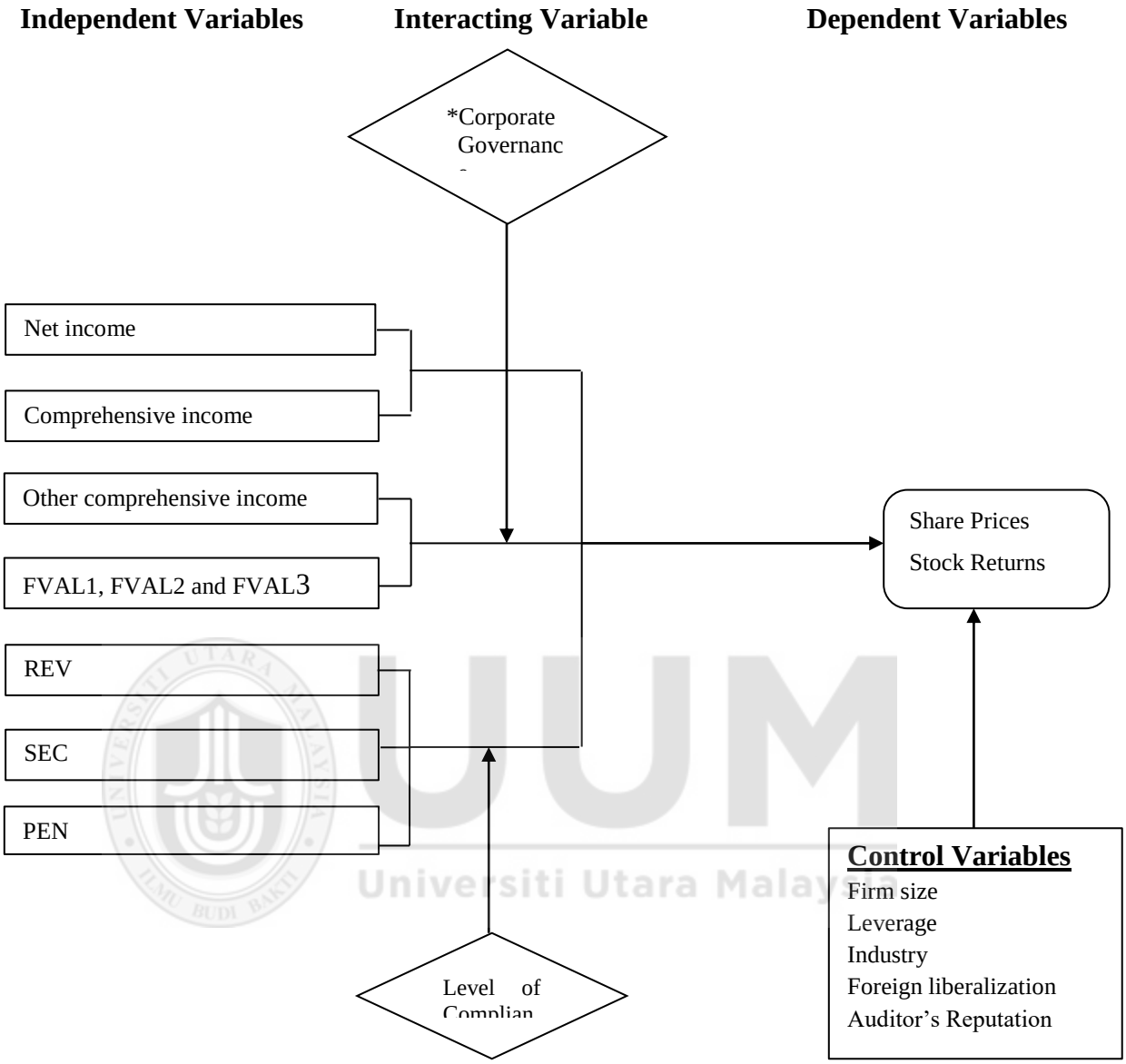
3.4 Theoretical Framework

Valuation theory provides an intuitive background for understanding the relationship between accounting numbers and market value of equities. When valuing firms, investors use accounting information as a vital information source (Francis & Schipper, 1999). Because valuation theory assumes investors to be rational individuals with greater need for wealth maximization (Beaver, 2002), the theory provides a standard for explaining the relationship among net income, comprehensive income, its components and market value of equities. This valuation reflects the statistical association between accounting earnings and share price or returns, suggesting that the reported earnings numbers represent relevant information used by market participants (Francis & Schipper, 1999; Beaver, 2002). Given the conservative nature of investors, the strength of corporate governance practices (Abbody et al., 2006; Maines & Wahlen, 2006; Song et al., 2010; Lee & Park, 2013); fair value hierarchy information (Kanagaretnam et al., 2009; Song et al., 2010; Lee & Park, 2013; Lu & Mande, 2014); and level of compliance (Hodgdon et al., 2008; Tsalavoutas, 2009; Hussainey & Walker, 2009) also have a significant valuation effect on the market value of equities.

Agency theory has been used as an important paradigm to explain the effect of reliability qualities on the relationship between earnings components and market value of equities. Agency theory portrays the information asymmetry between the agent and the principal

in the financial reporting process (Jensen & Meckling, 1976; Morris, 1987). In achieving one or more goals in the financial reporting process, multiple valuation methods could be selected singly or jointly in establishing fair-value estimates. Because these alternative permissible valuation methods for a set of accounting standard lie somewhere between conservative and aggressive choice, a potential conflict of interest may arise (Fields et al., 2001; Rainsbury et al., 2009). This is usually a huge source of information asymmetry and subsequently agency costs. Thus, corporate information needs to be presented systematically to be attractive to market participants in order to maximize the share prices and returns of firms. Otherwise, a decline in value relevance could result (Coram et al., 2011).

Considering the fact that other comprehensive income usually includes several "mark-to-market and mark-to-model" types of adjustments, perceived managerial opportunism may lead to low value relevance of fair value earnings (Maines & Wahlen, 2006; Song et al., 2010; Christensen et al., 2012; Lee & Park, 2013). To mitigate the negative consequences of information asymmetry, companies may wish to demonstrate that they are aligned with best practices by setting a strong corporate governance practices and provide detailed disclosure about the company's fundamentals (basis for measurement and recognition). For this reason, the strength of the corporate governance mechanisms, information on fair value hierarchy and the level of compliance could ameliorate the reliability concerns of fair value earnings. Thus, agency theory may be a good yardstick for examining the influence of reliability factors on investors' pricing of other comprehensive income and its components. Therefore, Figure 3.1 diagrammatically depicts implication of valuation



Notes:

*REV = fair value gains and losses on non-current assets; SEC = fair value gains and losses on re-measuring available-for-sale financial assets; PEN= actuarial gains and losses on defined benefit plans.

*Corporate governance is a factor measure of audit committee independence, audit committee financial expertise, the frequency of audit committee meetings, audit committee size, auditor's reputation and no material internal control weakness.

*FVAL1, FVAL2 and FVAL3 are classifications of REV, SEC and PEN based on fair value hierarchy levels of measurements (level 1 to 3).

*Level of compliance is compliance with the relevant accounting disclosure requirement relating to IAS 16, IAS 19 and IFRS 7.

Figure 3.1

Conceptual Framework for Influence of Reliability Factors on the Relationship Between Earnings Components and Share Prices/Returns.

theory by mapping earnings components into the share price and the stock returns, and integrating reliability factors as a test of reliability (agency cost) of fair value earnings.

3.5 Summary

This chapter presents the theories that explain the relationship between accounting numbers and market value of equities as well as the interaction effect of reliability factors. The chapter further derived hypotheses based on the theories and previous empirical studies. Lastly, the chapter discusses the framework of the current study. Beyond this chapter is the research methodology.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 Introduction

This chapter focuses on the research method. Specifically, this chapter covers the research approach and design, measurements of variables, the population of the study, sampling technique and sample size, data collection procedure, data analysis techniques, model specifications and summary of the chapter.

4.1 Research Approach/Design

Zikmund et al. (2010) defined research design as a master plan or a blueprint that spelt out the methods and procedures for collecting and analysing the required information. In business research, exploratory, descriptive and explanatory are commonly used research designs (Sekaran & Bougie, 2010; Zikmund et al., 2010). However, the suitability of the type to be used largely depends on the nature and clarity of the research problem. Exploratory design is conducted to gather information on a particular problem at hand, and thus does not provide conclusive results. Exploratory research is therefore, conducted to enable understanding of a new phenomenon, which requires further study to be conducted to gain verifiable and conclusive evidence (Zikmund et al., 2010). Descriptive design is conducted in particular situations in which just a little knowledge of the nature of a problem exits. It is therefore, conducted to provide a more specific description of a problem (Sekaran & Bougie, 2010; Zikmund, et al., 2010). Explanatory design is also referred to as hypothesis testing and is conducted to further provide specific knowledge

and description of the nature of relationships among variables being investigated (Sekaran & Bougie, 2010; Zikmund et al., 2010). The present study is considered as an explanatory research design because it investigates and explains the relative and incremental value relevance of comprehensive income and its components and the influence of reliability factors on the value relevance of other comprehensive income and its components.

4.2 Measurements of Variables

The present study has three categories of variables. The first category is financial information, which comprises net income, comprehensive incomes and its components. The second is the market-based measures (share price and stock returns), and the third is the reliability factors (corporate governance mechanism, fair value hierarchy information and level of compliance). The following subsections discuss the conceptualization of these variables in order to provide their clear meanings and consistent interpretation as Fisher and Foreit (2002) suggested. Overall, a summary of variables measurement is presented in Appendix A (p. 321).

4.2.1 Measurement of the Dependent Variables

The dependent variables in this study are share prices and stock returns, which are synonymous with the market value of equity. Value relevance studies have extensively utilised share prices and stock returns in investigating the value relevance of firm specific and economic innovations such as information content of a set of accounting standards, transition between accounting standards, changes in corporate governance practices and listing requirements. These relationships have been tested for different dates due to

contextual factors and regulatory requirements. For instance, some studies have used three months (Kanagaretnam et al., 2009), four months (Tsalavoutas et al., 2012), six months (Wang et al., 2006; Barth et al., 2008; Karampinis & Hevas, 2009; Barth et al., 2012), and financial year-end (Amir et al., 1993; Dhaliwal et al., 1999; Kim, 2013; Mironiuca & Carp, 2014; Mecheeli & Cimini, 2014) for different motivations. Wang et al. (2006) used six months because the Dutch Civil Code, article 210 obliged firms to publish financial statements five months after the fiscal year-end with an extension of one-month for the release of the financial statements.

Statutorily, all Nigerian reporting entities are mandated to file their annual reports with the Security and Exchange Commission (SEC) on or before the 90th day after the accounting year-end. Given this regulatory requirement, share prices (SP_{it}) was set at four months after the financial year-end. The motivation for this choice is based on the three months required to file their annual reports with the SEC plus one month extension for the release of the financial statements as Wang et al (2006) implemented.

SP_{it} = Share price four months after the financial year end of firm *t* at time *i*. (1)

Four months after the financial year-end ensures that market participants have access to all available information for decision-making and have incorporated such information into their portfolios as argued in the previous studies (Harris & Muller, 1999; Tsalavoutas et al., 2012).

To avoid scaling problems and bias inference, this study employs a return model as a second approach for testing relative and incremental value relevance models. Stock returns in this study are operationalised as the annual stock return commencing eight months before and ending four months after the fiscal year-end. The total stock returns have been calculated as Amir et al. (1993) and Mechelli and Cimini (2014) implemented.

$$RET_{it} = \frac{(P_t + D_t - P_{t-1})}{p_{t-1}} \quad (2)$$

Where

RET_{it} = Stock returns (inclusive of dividends) for the year ended four months after the fiscal year end.

P_1 = Current market value, or price, of the firm's equity at date t.

D_t = Net dividends paid at date t.

P_0 = Previous market value, or price, of the firm's equity at date t.

Four months' stock return was also selected on the assumption that users have access to financial statement information. This selection is similar to Dhaliwal et al. (1999), Barth et al. (2012) and Lee and Park (2013).

4.2.2 Measurements of the Independents Variables

Accounting information variables that represent the independent variables are operationalised below in accordance with previous studies.

Book Value of Equity (BVE): book value of equity per share is measured as the book value of common equity at the end of the fiscal year t deflated by the number of outstanding shares consistent with Kanagaretnam et al. (2009), Anandarajan and Hasan (2010) and Mechelli and Cimini (2014).

Net Income (NI): refers to earnings after tax of a company at the end of the financial year t. The net income variable is annual net income per share for the price models and annual net income scaled by the beginning price of equity in the return year in the return models. This is in line with Dhaliwal et al. (1999), Cahan et al. (2000) and Mechelli and Cimini (2014).

Comprehensive Income (CI): refers to net income plus other comprehensive income at the end of the financial year t. Comprehensive income is scaled by outstanding shares for the price models and the beginning of the year price for the return models consistent with Dhaliwal et al. (1999) Lee and Park (2013) and Mechelli and Cimini (2014).

Other Comprehensive Income (OCI) and Its Components: denotes the sum of items of other comprehensive income (dirty surplus flows), which includes: 1) gains and losses on non-current assets (REV); 2) gains and losses on available-for-sale financial securities (SEC); and 3) actuarial gains and losses on defined benefit plans (PEN) as contained in the Nigerian version of IFRS. Other comprehensive income and the components are scaled by the outstanding shares for the price models and the beginning

price of equity for the return models in line with Dhaliwal et al. (1999), Cahan et al. (2000), Wang et al. (2006) Kanagaretnam et al. (2009) and Mechelli and Cimini (2014).

4.2.3 Measurements of the Interacting and Control Variables

Interacting variables in this study include corporate governance mechanism and individual corporate governance elements, which are interacted with other comprehensive income. Aside the direct test of reliability of fair value hierarchy level of measurement, a factor score of corporate governance mechanism was interacted with fair value hierarchy earnings. Lastly, the level of compliance with IAS 16 (Revaluation of Property, Plant and Equipment), IAS 19 (Employee Benefits) and IFRS 7 (Financial instruments: Disclosures) were also interacted with other comprehensive income items. Next sub-heading operationalised these variables.

Corporate Governance Mechanism: is a factor score of six corporate governance variables. The factor score is obtained using Principal Component Analysis (PCA), a data deduction technique following Habib and Azim (2008), Bhat (2009) and Song et al. (2010). PCA was used to construct factor score given its advantages of reducing random measurement error when computing a standardized variable and often gives a parsimonious score of the underlying measures[1] (Habib & Azim, 2008; Song et al., 2010). The six corporate governance variables include:

Audit Committee Independence (ACIND): is defined as someone who is "not employed or closely affiliated with the company" (SEC, 2011). CAMA 1990 and SE C

[1] With PCA, information expressed by the correlations between six corporate governance variables was summarized and a single variable (BCGSCORE) was obtained.

2011 require 51 percent or more of the members of audit committee to be independent directors. ACIND is the ratio of independent audit committee members to ACSIZE consistent with prior studies (Klein, 2002; Habib & Azim, 2008, Suárez et al., 2013; Woidtke & Yeh, 2013.

Audit Committee Size (ACSIZE): is defined as the total number of statutory audit committee members. CAMA 1990 and SEC 2011 specified an audit committee of at least three members. Thus, ACSIZE is the actual number of audit committee members similar to Anderson et al. (2004), Habib and Azim (2008), Yesin and Nelson (2012), and Woidtke & Yeh (2013).

Audit Committee Expertise (ACEXP): measures whether a firm has accounting experts sitting on its audit committee. CAMA 1990 and SEC 2011 specified at least 1 member of a professional accounting body (qualified chartered accountant). Following this regulation and previous studies, ACEXP is measured as the proportion of audit committee members possessing professional accounting qualifications relative to audit committee size (Zhang, Zhou, & Zhou, 2007, Rainsbury et al., 2009; Yasin & Nelson, 2012).

Audit Committee Meetings (ACMET): Both CAMA and SEC 2011 do not provide strict guidance as to what constitutes the ideal number of audit committee meetings. However, audit committee meeting in the extant literature is proxied as the number of meetings conducted during the year. Following Carcello et al. (2002), Goodwin-Stewart

and Kent (2006), Barua et al. (2010), Yasin and Nelson (2012) and Woidtke and Yeh (2013), ACMET is measured as the number of meetings conducted during the year.

Auditor's Reputation (AUDR): is a dummy variable coded 1 for companies audited by a Big 4 firm and 0 for companies audited by a non-Big 4 firm. This approach is consistent with Song et al. (2010), Lee and Park (2013) and Mironiuca and Carp (2014).

No Material Internal Control Weakness (NMICW): an indicator variable given the value of 1 if a firm has not disclosed any material internal control weakness and 0 if otherwise following Doyle et al. (2007a), Hammersley et al. (2008) Song et al. (2010) and Brown et al. (2014).

BCGSCORE: a composite measure of corporate governance mechanisms using principal components analysis (PCA). The score is obtained by taking the average score from Audit Committee Size (ACSIZE), Audit Committee Independence (ACIND), Audit Committee Expertise (ACEXP), Audit Committee Meetings (ACMET), Auditor's Reputation (AUDR) and No Material Control Weakness (NMICW) consistent with Habib and Azim (2008), Song et al. (2010) and Sheu and Lee (2012). To test the value relevance differences between high and low governance firms, the data was partitioned into high and low governance firms. This was achieved by computing a RANK variable based on the median value of BCGSORE. To differentiate firms based on best practices, BCGSCORE was split at the median to cluster the sample into two groups. The first group is strong governance firms (entities with an aggregate score above the median) and

the second group is weak governance firms (entities with an aggregate score below the median). Thus, observations with a score above the median value were coded 1 and 0 for observations with aggregate scores less than the median value similar to Song et al. (2010).

Fair Value Hierarchy Information: measures the extent of managerial discretion associated with other comprehensive income items. Fair value gains and losses on non-current assets, available-for-sale financial securities and pension reserves are classified based on hierarchy level of measurement. Level 1 is the valuation based on quoted prices in the active market; Level 2 is a measurement based on the observable input and Level 3 is a measurement based on unobservable input (internally generated valuation) as IFRS 7 stipulated. This level measurement is similar to the classification used by Song et al. (2010), Lu and Mande (2014) and Goh et al. (2015).

Level of Compliance with IFRS: the measurement of the level of compliance is based on the disclosure index presented in Table 4.1 as Street and Gray (2001) utilized. Table 4.1 delineates a breakdown of IAS 16, IAS 19 and IAS 39 and previous studies that justify their inclusion. In the compliance literature, Cooke's (1989) dichotomous approach for measuring compliance with disclosure requirements is most common. This approach used an unweighted disclosure index where "compliance is calculated as the ratio of the total items disclosed to the maximum possible score applicable for that company" (Cooke, 1989; Street & Bryant, 2000; Street & Gray, 2001; Glaum & Street, 2003; Hodgdon et al., 2008).

Following previous studies, unweighted compliance scores were based on 41 disclosure items, obtained from IAS 16 (10 items), IAS 19 (17 items) and IAS (14 items) relating to reporting fair value gains and losses in comprehensive statement. The items are coded as disclosed or not disclosed for a sample of 274 firm-year observations reporting under IFRS. The index measures the actual number of mandatory disclosures provided by a firm in year t divided by the number of mandatory disclosures required for each standard in year t following Street and Gray (2001), Hodgdon et al. (2008) and Hassan et al. (2009).

Table 4.1

Components of the IAS/IFRS Disclosure Index

Accounting Standards	Disclosures	Previous Studies
IAS 16, property, plant, and equipment.	All required disclosures for revaluing (fair value gains and losses) PPE.	Street et al. (1999) and Hodgdon et al. (2008).
IAS 19, retirement benefits.	All required disclosures for actuarial gains and losses on the comprehensive income.	Street et al. (1999), Cairns (1999), Street and Bryant (2000) and Hodgdon et al. (2008).
IFRS 7, financial instrument: Disclosure.	All required disclosures for re-measuring available-for-sale financial assets.	IASB disclosure requirement for IFRS 7.

When investigating compliance with accounting standards, validity and reliability of the research instrument needs to be ensured due to the subjectivity in constructing a compliance index. It is therefore important to note that there is no validity or reliability threats were present for the compliance index used in this study. This is because aside from the mandatory requirements of IASB, their validity and reliability had been tested

and ensured in previous studies (Street & Gray, 2001, Hodgdon et al., 2008; Tsalavoutas, 2009). Appendix B (p. 325) presents the items in detail.

Company Size (FSIZE): refers to the natural log of the market capitalization of a company at the end of the financial year (Chen & Jaggi, 2000; Leventis & Weetman, 2004; Hung & Subramanyam, 2007).

Firm Leverage (LEV): is measured as total long-term debt per total assets of a firm during a financial year in line with Habib (2008) and Anandarajan and Hasan (2010).

Type of industry (INDUS): is classified according to the NSE industry classification code. Following Barth and Clinch (1998) and Dainelli et al. (2013), this study classified industry effect using the NSE industry classification code as per Appendix C (p. 330).

Foreign Liberalization (FLIB): is measured as the percentage of shares of firm i owned by foreign companies. This is consistent with Hasan and Marton (2003), Boubakri et al (2005) and Anandarajan and Hasan (2010).

4.3 Data Collection

This section delineates the characteristics of the population and the sample used for the study.

4.3.1 Population

As delineated in Table 4.2, a maximum of 189 firms were listed in NSE for the year 2014. These firms are the target population, but, because some firms may not have other comprehensive income items, the study did not adopt the entire sample. The sample used was based on the selection process discussed in the next section.

Table 4.2
Detailed Sector Distribution of NSE Market

Industry	**Year (2014)**
Agriculture	5
Conglomerate	6
Construction	9
Consumer Goods	31
Financial Services	56
Healthcare	11
Industrial Goods	27
Oil and Gas	12
Services	32
Total Population	189

Source: NSE website

4.3.2 Sampling Technique and Sample Size

The potential population included 189 firms. In this instance, the availability-sampling technique was considered appropriate because it allows the researcher to use companies with available information that met a study's design selection criteria. The decision to exclude 72[2] companies from the sample was because the study follows a research design

[2] The difference between the population and the actual sample of the study (189-117).

that imposed a condition of non-zero other comprehensive income items and market value of equities consistent with previous studies (Kanagaretnam et al., 2009; Kubota et al., 2011, Mechelli & Cimini, 2014). This means that firms with zero other comprehensive income items are not part of the sample. To focus primarily on firms with the required information, a filtering process, involving three criteria as Ismail (2003), Hung and Subramanyam (2007), Kanagaretnam et al. (2009), Kubota et al. (2011) and Mechelli and Cimini (2014) implemented was used. Therefore, the final sample includes only those firms that passed the following filtering test:

1. The companies must have been listed in the NSE within the research period.
2. The sample includes companies with annual reports/financial statements for the period covered by the research either on the Nigeria Stock Exchange website or on the company's website.
3. Only companies with at least one other comprehensive income item and information on the market value of equities are included in the sample.

Based on the above selection criteria, Table 4.3 presents the breakdown of the sample calculations by industry, by year and by objectives. Panel A provides a breakdown of the full sample partitioned into financial and nonfinancial firms with the greatest observations from the nonfinancial firms covering 2010 to 2014. The initial total sample includes 945 firm-year observations comprising 260 financial firms and 685 nonfinancial firms. A total of 477, 94 financial and 302 nonfinancial firm-year observations were lost due to missing data or because all three components of other comprehensive income are

zero. Because this study used the price model that required share price as a dependent variable and the return model that also required dividend for computing stock returns, an additional 100 firm-year observations (35 financial and 65 nonfinancial) for firms without data on share prices and dividend were lost. Again, another 19 firm-year observations (35 financial and 65 nonfinancial) were lost because of extremely large data that would result in abnormal influence. Thus, the final sample presented in Panel A consists of 349 firm-year observations (123 financial and 226 nonfinancial) from 36 financial and 226 nonfinancial firms.

Panel B provides a breakdown of sub-sectors of the major classification of financial and nonfinancial firms. 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 Consumer goods, Industrial goods, Services and Oil and Gas; and Agricultural and Healthcare firms being the least. Panel B also delineates the number of firms in each industry, which demonstrate that no single industry dominates the sample. Panel C is the breakdown by year, showing that the sample is relatively spread across the years. The tests of H_{1a}, H_{2a} and H_{2b} are based on the sample of 123 financial and 226 nonfinancial firms-year observation. Given that the study investigates the value relevance difference of comprehensive income and other comprehensive income between voluntary and mandatory regimes, the data were partitioned into a voluntary regime (2010-2011) and a mandatory regime (2013-2014) to test for H_{1b} and H_{2c}.

Table 4.3

Sample Calculation for Firms that Passed the Filtering Process

Panel A: Sample Calculation for Year 2010 to 2014	Financial	Nonfinancial	Total
Total firm-year observations	260	685	945
Less:			
Firm-year observations with zero other comprehensive income items	94	383	477
Total observations with non-zero other comprehensive income item	166	302	468
Less:			
Firm-year observations with no information on share price/Dividend	35	65	100
Firm-year observations due to extremely large share price	8	11	19
Firm-year observations *for the Test of* H_{1a}, H_{2a} *and* H_{2b}	123	226	349

Panel B: Composition by industry	Firm-year Observations	%	Number of firms	%
Financial				
Banks	68	55.28	18	50
Insurance	46	37.4	14	38.89
Investment and Financial Services	9	7.32	4	11.11
Total	123	100	36	100
Nonfinancial				
Agriculture	9	3.98	4	4.94
Conglomerate	12	5.31	5	6.17
Construction	17	7.52	6	7.41
Consumer Goods	63	27.88	21	25.93
Healthcare	13	5.75	4	4.94
Oil and Gas	19	8.41	7	8.64
Industrial Goods	58	25.66	19	23.46
Services	35	15.49	15	18.51
Total	226	100	81	100

Panel C: Composition by Year	2010	2011	2012	2013	2014	Total Obs
Financial						
Banks	10	6	12	21	19	68
Insurance	8	7	11	13	7	46
Investment and Financial Services	0	2	4	3	0	9
Total	18	15	27	37	26	123
Nonfinancial						
Agriculture	0	0	3	4	2	9
Conglomerate	2	0	4	3	3	12
Construction	2	2	4	4	5	17
Consumer Goods	7	5	16	12	13	53
Healthcare	1	2	3	3	4	13
Industrial Goods	3	2	5	4	5	19
Oil and Gas	8	8	18	16	18	68
Services	5	5	9	7	9	35
Total	28	24	62	53	59	226

Note: The sample comprise Nigerian firms with at least one item of other comprehensive income between 2010 and 2014. Obs denotes observations.

Table 4.3 (continued)

Panel D: Combined Sample	Observations
Total number of observations	349
Less firms-year observations without full annual report	22
Firm-year observations for Testing $H_{3a,}$ H_{3b} , $H_{4b\ and}$ H_{4b}	327

Note: The sample comprise Nigerian firms with at least one item of other comprehensive income with annual reports between 2010 and 2014.

Panel E: Sample for Post IFRS Adoption Period	Observations
Total number of observations	349
Less:	
Firms-year observations in the voluntary regime	85
Firms-year observations without full annual report	5
Total number of observations in the Mandatory Regime for Testing H_{5a} and H_{5b}	259

Note: The sample comprise Nigerian firms with at least one item of other comprehensive income in the Post IFRS regime (2012 and 2014).

Panels D and E are combined sample for achieving the last three objectives. One motivation for combining the sample was the identical requirement[3] for the formation and disclosure of corporate governance practices for both financial and non-financial firms as stipulated by the CAMA 1990 as amended 2004 and SEC 2011. Second, all firms reporting under the IFRS framework are required to mark-to-market or mark-to-model certain assets and liabilities and to report fair value gains and losses using fair value hierarchy. Third, compliance with relevant accounting standards relating to other comprehensive income is almost homogeneous for financial and nonfinancial firms with respect to IAS 16 and IAS 19. Fourth, given the low frequency of fair value reporting and the rigorousness of analysis, it will be more appropriate to combine the sample in the similar to Jones and Smith (2011) and Mechelli and Cimini (2014).

[3] CAMA (1990), SEC (2011) and PwC (2011).

The initial sample in Panel D comprised 349 firm-year observations. Because objectives three and four focused on corporate governance variables and fair value hierarchy some content analysis of the full annual report became necessary for data extraction purposes. An additional 22 firm-year observations were lost due to unavailability of full annual reports, and this reduced the sample to 327 firm-year observations for testing $H_{3a,}$ H_{3b}, H_{4a} and H_{4b}. Panel E delineate firm-year observations in the IAS/IFRS mandatory regime. Because the fifth objective focused on the value relevance of IAS 16 (Revaluation of Property, Plant and Equipment), IAS 19 (Employee Benefits) and IFRS 7 (Financial instruments: Disclosures) and whether they affect the reliability of fair value gains and losses on other comprehensive income, the mandatory regime was considered appropriate for this analysis to avoid confounding effect. Thus, tests of H_{5a} and H_{5b} were based on 259 firm-year observations after eliminating 85 firms-year observations in the voluntary regime and 5 firms-year observations without a full annual report. The following section discusses the data collection procedure.

4.3.3 Data Collection Procedure

The analysis for this study was conducted at the annual level using financial, market-based, and non-financial data collected from firms that passed the filtering process. All data regarding accounting numbers (except for other comprehensive income items) and measures of firm value were collected from the Thomson Routers Database. Missing information from the database and nonfinancial data were hand collected from annual reports following Barth and Clinch (1998) and Cahan et al. (2000).

4.4 Techniques of Data Analysis

The main idea of this study is to examine the relative and the incremental value relevance of comprehensive income and it components; and the influence of reliability factors on investors pricing of other comprehensive as well as the items. As discussed below, both descriptive and inferential analyses are performed in addressing the two main issues raised in the study.

4.4.1 Descriptive Statistics

Descriptive statistics deal with different aspects of measures aimed at summarizing the pertinent characteristics of collected data for clear, logical and meaningful presentation. The main descriptive statistics of the variables used in the regression analysis include mean, median, minimum, maximum, standard deviation, skewness and kurtosis. These descriptive statistics are used to describe the frequency, magnitude and signs of comprehensive income and its components.

4.4.2 Correlation Analysis

This study utilized correlation to explain the direction of relationships between the variables of the study and to check multicollinearity among the variables as suggested by Pallant (2007). The Pearson product-moment coefficient was used because it explains the relationship between continuous variables (Pallant, 2007). To determine the strength of the relationships between the study variables, a statistical significant level of $p < 0.05$ was used as the benchmark.

4.4.3 Regressions Analysis

The third analysis in this study is regression analysis. Multiple regression is a statistical technique that estimates values of dependent variables with respect to two or more independent variables as its basis. Estimating values of dependent variables with respect to independent variables is sought to examine the relationship between the outcome variable and explanatory variables (Pallant, 2007). In other words, it helps to explain the proportion of the variance in a dependent variable that is explained by a set of independent variables (Pallant, 2007). Consistent with previous value relevant studies (O'Hanlon & Pope, 1999; Cahan et al., 2000; Wang et al., 2006; Kanagaretnam et al., 2009; Song et al., 2010; Lee & Park, 2013; Mechelli & Cimini, 2014), pooled ordinary Least Square regression was employed in this study. To ensure that the findings documented in this study are not biased, preliminary tests (assumptions of OLS) are observed following the suggestion of the previous studies (Canvana et al., 2001; Gujarati, 2004; Pallant, 2007).

4.5 Estimation Procedure (Preliminary Tests Conducted)

To strengthen the analyses performed in the subsequent chapters, quality tests for a dataset are essential (Canvana et al., 2001; Pallant, 2007). As part of econometric consideration, the quality tests performed include a normality test, homoscedasticity, multicollinearity and no specification bias as Canvana et al. (2001), Gujarati (2004), Field (2005) and Pallant (2007) have recommended. First, normality tests for parameter estimates were conducted in two ways. In the first stage, data screening was performed using the winsorization approach to avoid the problem of outliers as implemented in

previous studies (Kubota et al., 2011; Barth et al., 2012; Khan & Bradbury, 2014; Mechelli & Cimini, 2014). The skewness and kurtosis of the variables are calculated. Based on the Field's (2005) benchmark, a skewness of +/-1.96 and kurtosis of +/-3.29 suggest a multicollinearity problem. For extreme cases, Kline (2016) asserts that a dataset could only present a serious multicollinearity problem when the skewness value is greater than 3 and the kurtosis value is more than 10.

The second quality test is homoscedasticity, which describes the homogeneity of the variance of the variables. This is to mitigate concern about the proneness of price model to heteroskedastic specification errors (Kothari & Zimmerman, 1995), which could lead to a misleading inference (Petersen, 2009; Tsalavoutas et al., 2012; Kim, 2013). Third, a multicollinearity test is performed to ensure that it is not present between the independent variables. The existence or nonexistence was checked using Pearson's product-moment correlation coefficient, Variance Inflation Factor (VIF) and Tolerance. According to Gujarati (2004) and Pallant (2007), a high pairwise correlation coefficient (excess of 0.8) between regressors indicates a case of multicollinearity. A mean VIF test above 10 and a tolerance value of more than 1 for individual variables suggests that the variables are highly collinear (Gujarati, 2004).

Fourth is no specification bias assumption. According to Gujarati (2004), omitting important variable from a regression model or choosing a wrong specification, "the validity of interpreting the estimated regression will be highly questionable" (Gujarati, 2004, p. 73). Thus, link test for single-equation models was used for all estimations

because it produces the variable of prediction, _hat, and the variable of squared prediction, _hatsq for interpreting fitness of regression model (Pregibon, 1979). Overall. these quality tests are essential because their violation affects the parameter estimates extensively and can result in inflated errors and subsequently biased inference (Gujarati, 2004; Pallant, 2007).

4.6 Model Specifications

Methodologically, this study begins with price and return models, which are the most common regression specifications in the value relevance research (Barth et al., 2001). The two models address related, but different value-relevance questions (Barth et al., 2001). The price model is a framework in which firm market value depends on the book value of equity and earnings (Ohlson, 1995). Ohlson (1995) specified price model as:

$$P_{it} = \beta_0 + \beta_1 BVE_{it} + \beta_2 E_{it} + \beta_3 V_{it} \quad (3)$$

Where

P_{it} = Market value of share of firm *i* at time *t*

B_{it} = The intercept

BVE_{it} = Book value of equity of firm *i* at time t scaled by outstanding shares

E_{it} = Earnings for the year of firm *i* at time *t* scaled by outstanding shares

V_{it} = Other information about future abnormal earnings reflected in the firm's equity value but currently not in the firm's financial statements.

The return model on the other hand is concerned with whether the accounting level and change earnings deflated by beginning-of-period price are associated with stock returns (Easton & Harris, 1991). This model is based on the idea that, because owners' equity (book value) and market value are both "stock" variables explaining wealth of equity holders, other related flows (earnings) adjusted for dividends divided by price at the beginning of the return year should be associated with stock return (Easton & Harris, 1991). To empirically test the above intuition, Easton and Harris (1991) specified the return model as:

$$RET_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 \Delta EPS_{it} \quad (4)$$

Where

RET_{it} = Stock returns of firm *i* at time *t*

EPS_{it} = Current year earnings deflated by price at the beginning of return period

ΔEPS_{it} = A change in earnings deflated by price at the beginning of return period

To strengthen the analyses performed in the subsequent chapters, quality tests for a dataset are essential (Canvana et al., 2001; Pallant, 2007). As part of econometric consideration, the quality tests performed include a normality test, homoscedasticity, multicollinearity and no specification bias as Canvana et al. (2001), Gujarati (2004), Field (2005) and Pallant (2007) have recommended. First, normality tests for parameter estimates were conducted in two ways. In the first stage, data screening was performed using the winsorization approach to avoid the problem of outliers as implemented in

previous studies (Kubota et al., 2011; Barth et al., 2012; Khan & Bradbury, 2014; Mechelli & Cimini, 2014). The skewness and kurtosis of the variables are calculated. Based on the Field's (2005) benchmark, a skewness of +/-1.96 and kurtosis of +/-3.29 suggest a multicollinearity problem. For extreme cases, Kline (2016) asserts that a dataset could only present a serious multicollinearity problem when the skewness value is greater than 3 and the kurtosis value is more than 10.

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Fourth is no specification bias assumption. According to Gujarati (2004), omitting important variable from a regression model or choosing a wrong specification, "the validity of interpreting the estimated regression will be highly questionable" (Gujarati, 2004, p. 73). Thus, link test for single-equation models was used for all estimations

because it produces the variable of prediction, _hat, and the variable of squared prediction, _hatsq for interpreting fitness of regression model (Pregibon, 1979). Overall. these quality tests are essential because their violation affects the parameter estimates extensively and can result in inflated errors and subsequently biased inference (Gujarati, 2004; Pallant, 2007).

4.6.1 Modelling the Relative and Incremental Value Relevance

Given the econometric problems of both models due to their deviations from the underlying theoretical model, this study utilized a modified Ohlson (1995) price model and the Easton and Harris (1991) returns model to test predicted hypotheses as Kothari and Zimmerman (1995) recommended. The models are specified in the next subsections.

4.6.1.1 Modelling the Relative Value Relevance of the Traditional Net Income and Comprehensive Income

This section presents models for testing the relative value relevance of traditional net income and the comprehensive income. Cahan et al. (2000) and Mechelli and Cimini (2014) used a modified Ohlson (1995) model as a means of developing a structure to examine the value relevance difference between the comprehensive income and net income. From model (3), E_{it}, which denotes earnings for year t is assumed to be equal to clean surplus earnings (net income) or dirty surplus (comprehensive income) as mathematical expressed below:

$$E_{it} = NI_{it} = CI_{it} \quad (5)$$

Where

NI_{it} = Net income of firm *i* during year *t.*

CI_{it} = Comprehensive income of firm *i* during year *t*

Therefore, substituting the parameters (NI and CI) from equation (5) into (3) lead to estimating a separate model for net income and comprehensive income to examine their relative value relevance as:

$$P_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 LNI_{it} + \beta_4 LNI_{it}^{*} NI\_S_{it} + \varepsilon_{it} \quad (6a)$$

$$P_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 CI\_S_{it} + \beta_3 LCI_{it} + \beta_4 LCI_{it}^{*} CI\_S_{it} + \varepsilon_{it} \quad (6b)$$

P_{it} = Share prices of a company *i* four months after financial year-end *t.*

NI_S_{it} = Net income per share of company *i* at end of year *t*.

CI_S_{it} = Comprehensive income per share of company *i* at year *t*.

LNI_{it} Indicator variable, taking the value of 1 for negative net income firms and 0 if otherwise

LCI_{it} = Indicator variable, taking the value of 1 if negative comprehensive income firms and 0 if otherwise

ε_{it} = The error term

Share prices four months after the end of the financial period ensure that investors have access to all available accounting information (Amir et al., 1993; Cheng et al., 1996; Francis & Schipper, 1999; Barth et al., 2008; Alali & Foote, 2012). All independent variables in the model are scaled using the outstanding number of shares at the end of the financial year. Because the underlying assumption is that investors may place different

weights on firms' net income and comprehensive income, coefficients of β_2 in models 6a and 6b are expected to be positive, but β_2 in 6a should be more significantly associated with share price than 6b. A major concern in using the price model is the econometric problem regarding scale bias. Thus, for all price models used in this study, alternative specifications wherein the deflator is the market value of equity was performed to test the sensitivity of the study's findings consistent with previous studies (Barth et al., 2008; Tsalavoutas et al., 2012). Following Hayn (1995), Barth et al. (2012) and Mechelli and Cimini (2014), the models control for firms with negative earnings by adding, in Equations (6a) and (6b), an indicator variable equal to 1 in case of negative earnings and 0 if otherwise. In terms of the regression coefficients, the parameter estimates in 6a and 6b in testing H_{1a} are stated as:

H_1: β_2 in models 6a and 6b are > 0, but the coefficient of β_2 in 6b is lower than β_2 in 6a suggesting that comprehensive income is less value relevant than the traditional net income as predicted by H_{1a}.

As an alternative check, the present study used the return model because it provides insight about the earnings level and change (Easton & Harris, 1991). This study considers the utility of a model similar to that of Mechelli and Cimini (2014). Thus, the following returns models are estimated as:

$$RET_{it} = \alpha_0 + \alpha_1 NI\_MC_{it} + \alpha_2 \Delta NI\_MC_{it} + \alpha_3 LNI_{it} + \alpha_4 LNI_{it}{}^{*} NI\_MC_{it} + \alpha_5 LNI_{it} * \Delta NI\_MC_{it} + \varepsilon_{it} \quad (7a)$$

$$RET_{it} = \alpha_0 + \alpha_1 CI\_MC_{it} + \alpha_2 \Delta CI\_MC_{it} + \alpha_3 LCI_{it} + \alpha_4 LCI_{it}{}^{*} CI\_S_{it} + \alpha_5 LCI_{it} * \Delta CI\_S_{it} + \varepsilon_{it} \quad (7b)$$

Where all other variables are earlier defined:

RET_{it} = Cumulative annual stock return inclusive of dividend of firm *i* commencing eight months before and ending four months after the fiscal year *t.*

Δ = Denotes a change between periods *t-1* and *t*;

Measurement for RET is consistent with Dhaliwal et al. (1999), Habib (2008) and Barth et al. (2012). All independent variables in the return model are deflated by the closing price at the beginning of the return year. All the independent variables are expected to be positively associated with stock returns. Expected regression coefficients for Equations 7a and 7b in testing H_1 are stated as follows:

H_{1a}: α_1 and $\alpha_2 > 0$ in both models; however, the coefficients of α_1 and α_2 in model 7b are expected to be lower than the coefficients of α_1 and α_2 in 7a suggesting that the level and change in the comprehensive income is less value relevant than the level and change of the traditional net income as predicted by $H_{1a.}$

For all models testing the relative value relevance (H_{1a}), the regression coefficient and coefficient of determination (R^2) was used to infer the relative value relevance of accounting numbers in line with Cahan et al. (2000), Biddle and Choi (2006) and Mechelli and Cimini (2014). Consistent with Dhaliwal et al. (1999), Biddle and Choi (2006) and Mechelli and Cimini (2014), Vuong's Z-statistic (1989) test of differences of R^2 was employed to verify whether the differences between the two earnings are

statistically significant. As a confirmatory test, Akaike's Information Criterion (AIC) was used to confirm the model (predictor) that best explains the market value of equities.

4.6.1.2 Modelling the Incremental Value Relevance of Other Comprehensive Income and its components

Model 8 indicates that comprehensive income is the sum of net income and other comprehensive income. Using model 8 as a basis, models 9 and 10 are further derived to test H_{2a}, which hypothesised that other comprehensive income provides incremental value relevance, but with a coefficient lower than the net income. To test this proposition, comprehensive income is decomposed into net income and other comprehensive income. Thus, this study follows O'Hanlon and Pope (1999), Cahan et al. (2000) and Mechelli and Cimini (2014) who extended a model similar to 6b to demonstrate the conditions where net income and other comprehensive incomes (sum of dirty surplus flows) are individually value relevant. Mathematically, this can be expressed as:

$$CI_{it} = NI_{it} + OCI_{it} \quad (8)$$

Where;

OCI_{it} = is the sum of the other comprehensive income items for firm *i* during year *t*. Therefore, replacing CI_{it} in the model 6b with NI_{it} plus OCI_{it} as per model 8 permit separate estimation for the coefficients of net income and other comprehensive income in testing H_{2a} estimated as:

$$SP_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 OCI\_S_{it} + \beta_4 LNI_{it} + \beta_5 LOCI_{it} + \beta_6 LNI_{it}^{*} NI\_S_{it} + \beta_7 LOCI_{it}^{*} OCI\_S_{it} + \varepsilon_{it} \quad (9)$$

$$RET_{it} = \alpha_0 + \alpha_1 NI\_MC_{it} + \alpha_2 \Delta NI\_MC_{it} + \alpha_3 OCI\_MC_{it} + \beta_4 LNI_{it} + \beta_5 LOCI_{it} + \beta_6 LNI * NI\_MC_{it} + \beta_7 LOCI * OCI\_MC_{it} + \varepsilon_{it} \quad (10)$$

All parameters in models 9 and 10 are as defined previously except for LOCI, which is an indicator variable, taking the value of 1 for negative other comprehensive income firms and 0 if otherwise. Expected regression coefficients of the parameters estimated in 9 and 10 can be stated as follows:

H_{2a}: β_2 and $\beta_3 > 0$ in model (9), but the coefficients of $\beta_2 > \beta_3$. Likewise, α_1 and $\alpha_2 > 0$, but the coefficient of $\alpha_1 > \alpha_2$. Evidence consistent with these predictions will suggest that other comprehensive income is less value relevant than the traditional net income as predicted by H_{2a}

Models 9 and 10 are tested further to examine the incremental value relevance of the individual components of other comprehensive income relative to the net income. O'Hanlon and Pope (1999), Cahan et al. (2000), Kanagaretnam et al. (2009), Kubota et al. (2011) decomposed other comprehensive income in models 9 and 10 into separate components to demonstrate the conditions where other comprehensive income items are individually value relevant. For instance, O'Hanlon and Pope (1999) estimate extraordinary items, goodwill write-offs, asset revaluations, differences in foreign currency translation and sundry dirty surplus flows for firms in the United Kingdom. Cahan et al. (2000) modelled the revaluation increment of fixed assets and increment or decrement due to foreign currency translation adjustments only using a sample of New Zealand firms. For Canadian firms, Kanagaretnam et al. (2009) modelled fair value

changes for available-for-sale investments, gain or loss on cash flow hedges and change in cumulative foreign currency translation adjustment only. Nevertheless, none of these studies estimate parameters based on the mandatory IFRS regime. Following these studies, the present study modelled unrealized gains and losses on available-for-sale marketable securities, gains and losses on non-current assets and adjustment to the pension plan in Nigeria. The model takes the following forms:

$$SP_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 LNI_{it} + \beta_4 LNI * NI\_S_{it} + \beta_5 REV\_S_{it} + \beta_6 SEC\_S_{it} + \beta_7 PEN\_S_{it} + \varepsilon_{it} \quad (11)$$

$$RET_{it} = \alpha_0 + \alpha_1 NI\_MC_{it} + \alpha_2 \Delta NI\_MC_{it} + \alpha_3 LNI_{it} + \alpha_4 NI * NI\_MC_{it} + \alpha_5 REV\_MC_{it} + \alpha_6 SEC\_MC_{it} + \alpha_7 PEN\_MC_{it} + \varepsilon_{it} \quad (12)$$

Where all other variables are as previously defined,

REV_{it} = Gains and losses on non-current assets of firm *i* at end of year *t*.

SEC_{it} = Gains and losses on available-for-sale securities of firm *i* at end of year *t*.

PEN_{it} = Actuarial gains and losses on pension plan of firm *i* at year *t*.

All independent variables in the above equation are deflated by the outstanding shares in the price model and by the beginning price of equity in the return model. The coefficients of the parameters are expected to be positively associated with share prices and stock returns. However, β_5 to β_7 and α_5 to α_7 are expected to be lower than β_2 and α_1. This suggests that other comprehensive income items are incrementally value relevant, but

lower than the net income. For H_{2b}, expected regression coefficients from equations (11) and (12) can be stated as:

H_{2a}: $\beta_2 = \beta_5 = \beta_6 = \beta_7 > 0$, but β_2 is expected to be greater than β_5 to β_7. Likewise, $\alpha_1 = \alpha_5 = \alpha_6 = \alpha_7 > 0$, but α_1 is greater than α_5 to α_7 as predicted in H_{2b}.

To interpret incremental value relevance of other comprehensive income and its components, three methodologies were employed consistent with previous studies (Mechelli & Cimini, 2014). First, the study tests the null hypothesis that β_3 and α_3 in models 9 and 10 and β_5 to β_7 as well as α_5 to α_7 in models 11 and 12 are equal to zero. In the second benchmark, the coefficients of parameters are expected to be less than the coefficient of the net income in their respective models. In the third methodology, incremental value relevance is concluded if there is increase in the coefficient of determination due to the inclusion of β_3 and α_3 in models 9 and 10; and β_5 to β_7 as well as α_5 to α_7 in models 11 and 12.

For both relative and incremental value relevance estimation, a test of the difference in the value relevance between voluntary and mandatory periods was performed. For this purpose, separate regressions for voluntary and mandatory periods are run and then Cramer's (1987) Z-statistic was employed to interpret the difference between the two periods. The test of Cramer Z-statistic requires computation of the standard deviation of estimated R^2's. Cramer (1987) reveals that this estimation is a function of the number of

independent variables, sample size, and the true R^2. As highlighted by Kothari (2001) this approach permits researchers to compare the coefficient of determination (R^2) of two models with and without the same outcome variable. Thus, Cramer's (1987) Z-statistic is helpful in making comparisons between industries, across periods and level of compliance and has been employed by Harris and Lang (1994), Arce and Mora (2002) and Tsalavoutas et al. (2012) among others. Cramer's (1987) Z-statistic is computed as:

$$\frac{R_1^2 - R_2^2}{\sqrt{\sigma^2(R_1^1) + \sigma^2(R_2^2)}} \qquad (13)$$

Where σ^2 is the standard deviation of (R^2).

Thus, Cramer's (1987) Z-statistic was used to compare value relevance differences of comprehensive income and other comprehensive income between voluntary and mandatory regimes as well as high and low compliance firms. Based on this statistic, it can be inferred whether there is any change in the valuation coefficients is relative and the incremental value relevance of each sub-sample across the two regimes and whether the level of compliance with IAS 16 (Revaluation of Property, Plant and Equipment), IAS 19 (Employee Benefits) and IFRS 7 (Financial instruments: Disclosures) varies between high and low compliance firms.

4.6.2 Modelling the Effect of Reliability Factors on the Value Relevance of Other Comprehensive Income and its Components

Like most previous value relevance studies, the relative and the incremental models presented in the preceding section employ Ohlson's (1995) model by omitting the parameter *V* term, which captures "other information". Ohlson (2001) asserted that omitting the *V* term from the equation makes the model "patently simplistic" because equating *V* to zero demonstrates that which is essential in the setting of market values is only the book value of equity and net income. Interestingly, a significant number of studies have underscored the presence of other variables as proxies for "other information" that influences the relationship between accounting numbers and share prices. A few examples include corporate governance and audit quality (Davis-Friday et al., 2006; Habib & Azim, 2008; Song et al., 2010); transparency, legal system and source of accounting standards (Anandarajan & Hasan, 2010); auditor's reputation (Lee & Park, 2013), and compliance with relevant accounting standards (Hodgdon et al., 2008; Hassan et al., 2009; Hussainey & Walker, 2009; Tsalavoutas, 2009).

In this section, previous models are estimated slightly differently by integrating corporate governance mechanisms and the level of compliance as an independent variable in the place of *V* in Eq. (3). The motivation for their inclusion was based on the fact that reliability factors have valuation implications and could either mitigate or increase agency costs of information asymmetry and hence are likely to interact with the share price-accounting numbers relationship. This could be in the form of rewarding firms based on the perceived reliability of fair value accounting information as a reflection of investors pricing of other comprehensive income. Consequently, significant and positive

(negative) coefficients of the interaction terms could indicate an improvement (decline) in the value relevance of other comprehensive income and its components as estimated in the following subsections.

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information asymmetry and hence are likely to interact with share price-accounting numbers relationship. This could be in the form of rewarding firms based on the perceived reliability of fair value accounting information as a reflection of investors pricing of other comprehensive income. Consequently, significant and positive (negative) coefficients of the interaction terms could indicate an improvement (decline) in the value relevance of other comprehensive income and its components as estimated in the following subsections.

4.6.2.1 Modelling the Influence of Corporate Governance on the Value Relevance of Other Comprehensive Income

Because other comprehensive income is a sum of dirty surplus flows derived from fair-value application, estimating the value of certain assets and liabilities may suffer managerial judgment and discretion (Christensen et al., 2012; Lee & Park, 2013). To a possible extent, investors would expect defalcation on the part of the managers for using discretion to present economic transactions. Because managers have the incentive to manage earnings, the determination of fair-value measures raises concerns about the quality of other comprehensive incomes as an input for valuation (Kanagaretnam et al., 2009; Lee & Park, 2013). Such a situation may likely affect investors' pricing of other comprehensive incomes. However, these challenges can be ameliorated through the oversight function of corporate governance practices.

Through monitoring, corporate governance mechanisms play a broader role in limiting the opportunistic behaviour of the managers. Thus, this could reduce the incidence of financial reporting fraud and negative earnings management, which are essential for

effective operations of capital markets (Song et al., 2010; Lee & Lee, 2011). To the extent that corporate governance mechanisms limit the managerial manipulation of financial reporting, especially other comprehensive income, a case can be made for reduced agency costs of information asymmetry. Consequently, the strength of corporate governance can enhance the quality of other comprehensive income. Therefore, this section modelled the role of corporate governance mechanism on the investors pricing of other comprehensive income as:

$$SP_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 OCI\_S_{it} + \beta_4 BCGSCORE_{it} + \beta_5 LNI_{it} + \beta_6 LOCI_{it} + \beta_7 OCI\_S_{it}{}^{*} BCGSOCORE_{it} + \beta_8 LNI_{it} NI\_S_{it} + \beta_9 LOCI_{it}{}^{*} OCI\_S_{it} + \sum_{t=1}^{m} \beta_{10j}.CONTROL_{it} + \varepsilon_{it} \quad (14)$$

Where some of the variables are as previously defined

$BCGSCOREit$ = A factor score of corporate governance mechanism using principal components analysis (PCA). The score is obtained by taking the average score from audit committee size, audit committee independence, audit committee expertise, audit committee meetings, auditor's reputation, and no material control weakness.

$\sum_{t=1}^{m} \beta_{10j}.CONTROL_{it}$ = Control variables, which include: $FSIZE_{it}$ = is the log of market capitalization; $FLIB_{it}$ = percentage of shares held by foreign investors and IND_{it} = NSE SIC code

For completeness, BCGSCORE is replaced with RANK to investigate reliability differences between low and high governance firms. Similarly, each corporate governance element (GOVELEM) replaced BCGSCORE for H_{3b} to examine how

individual measures support the greater impact of corporate governance on valuation of other comprehensive income. To demonstrate the incremental value relevance of other comprehensive income given the strength of corporate governance mechanism, the interaction term, β_7 is expected to be positive and significant; and the sum of β_3 and β_7 are theoretically expected to move toward coefficient value of 1 consistent with Song et al. (2010). The sum of β_3 and β_7 for high and low governance firms would be positive and significant with a greater coefficient predicted for high governance firms.

4.6.2.2 Modelling the Value Relevance of Fair Value Hierarchy and the Effect of Corporate Governance

Firms reporting under IFRS are required to mark-to-market certain financial assets and liabilities and to recognize holding gains and losses related to these items as other comprehensive income using the fair value hierarchy framework. Based on IFRS 7, the best evidence of superior reliability is the quoted price in an actively traded market (Level 1). When an active market for other comprehensive items does not exist, valuation techniques that employ observable (Level 2) or unobservable (Level 3) data are used; either can create room for managerial opportunism. The professional judgment required in establishing fair value estimates may be greater for unobservable and perhaps observable input (PCAOB, 2011; Song et al., 2010; Lee & Park, 2013; Siekkinen, 2016).

Thus, to the extent that Level 3 and perhaps Level 2 measurements induce information asymmetry, investors' will price fair value gains and losses differently for less and more subjective components of other comprehensive income (Song et al., 2010; Lee & Park, 2013; Lu & Mande, 2014; Sikkinen, 2016). However, because Level 2 measures

represents a midground for reliability between Level 1 and Level 3, the regression coefficient of a less reliable measure (Level 3) is expected to be less value relevant as compared to Level 1 and Level 2 as predicted for H_{4a}. Findings consistent with the expected coefficients are suggestive of decreasing reliability as fair value hierarchy descend from Level 1 towards Level 3

Ceteris paribus the strength of corporate governance mechanisms presumably reduces the incidence of managerial discretion associated with Level 3 and perhaps Level 2 measurements. Thereby, it enhances the quality and reliability of other comprehensive income items. If the affirmative is true for H_{4b}, it implies that the decreasing reliability of other comprehensive income items when fair value hierarchy descends from Level 1 towards Level 3 is influenced by the corporate governance mechanism in the Nigerian Market. Therefore, this section modelled the association between fair value hierarchy earnings and the influence of corporate governance mechanism on the fair value hierarchy earnings as:

$$SP_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 FVAL1\_S_{it} + \beta_4 FVAL2\_S_{it} + \beta_5 FVAL3\_S_{it} + \beta_6 LNI_{it} + \beta_7 NI\_S_{it}^{*} LNI_{it} + \varepsilon_{it} \quad (15)$$

$$SP_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 FVAL1\_S_{it} + \beta_4 FVAL2\_S_{it} + \beta_5 FVAL3\_S_{it} + \beta_6 BCGSORE_{it} + \beta_7 LNI_{it} + \beta_8 FVAL1\_S_{it} * BCGSCORE_{it} + \beta_9 FVAL2\_S_{it}^{*} BCGSCORE_{it} + \beta_{10} FVAL3\_S_{it}^{*} BCGSCORE_{it} + \beta_{11} NI\_S_{it} * LNI_{it} + \sum_{t=1}^{m} \beta_{12j}.CONTROL_{it} + \varepsilon_{it} \quad (16)$$

In the above specification, all the variables are as previously defined with exception of fair value hierarchy levels, which are defined as:

$FVAL1\_S_{it}$ = Fair value gains and losses based on the quoted price of firm *i* at time *t.*

$FVAL2\_S_{it}$ = Fair value gains and losses based on observable input firm *i* at time *t.*

$FVAL3\_S_{it}$ = Fair value gains and losses based on unobservable input firm *i* at time *t.*

As hypothesised by H_{4a}, all the parameters in model 15 are predicted to be positive and the coefficient of β_3 and β_4 should be greater than β_5. The interaction terms, β_8 to β_{10} are expected to be positive and significant to demonstrate the strength of the corporate governance mechanisms on the fair value hierarchy measurement. Following Song et al. (2010), the sum of coefficients of the interaction and non-interaction terms of these fair value assets is expected to increase toward their theoretically predicted coefficient values of 1.

4.6.2.3 Modelling the Influence of Compliance on the Value Relevance of Other Comprehensive Income Items

To provide insight about the impact of compliance with relevant accounting standards relating to components of comprehensive income, model 17 is estimated. The disclosure of accounting procedures followed in determining the value of accounting assets and liabilities can have positive valuation implications that can reduce the agency cost of information asymmetry (Nobes, 2006; Maines & Wahlen, 2006). Being an investor-based standard, IAS/IFRS underscores detailed disclosure of the assumptions used in determining fair value gains and losses relating to IAS 16 (Revaluation of Property, Plant and Equipment), IAS 19 (Employee Benefits) and IFRS 7 (Financial instruments: Disclosures). Detailed disclosure of these assumptions could constrain some potentially harmful managerial actions, which may improve the transparency of financial reporting

and subsequently affects users' perceptions of the financial statements regarding the prospects of the reporting entity (Hope, 2003). To the extent that disclosures provide relevant information about a company's prospects, disclosures should be associated with market values (Hussainey & Walker, 2009). Nevertheless, the argument on the low levels of compliance with the requirements of accounting standards is a common theme in the compliance literature (Tsalavoutas, 2009; Hussainey & Walker, 2009).

Accordingly, based on the premises of agency theory, companies take advantage of differentiating themselves by making an effort and/or incurring the necessary high information costs to comply with and consequently provide higher disclosure (Hodgdon et al., 2008; Hussainey & Walker, 2009). This seems to have "rewarding" implications because the transmission of reliable information plays a crucial role in the setting of market value especially in an environment with weak enforcement. Arguably, firms with higher compliance are likely to be valued higher than those with low compliance. Thus, the following model is estimated to test the impacts of compliance on the value relevance of the components of other comprehensive income as:

$$SP_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 REV\_S_{it} + \beta_4 SEC\_S_{it} + \beta_5 PEN\_S_{it} + \beta_6 COMPL + \beta_7 LNI_{it} + \beta_8 NI\_S * LNI_{it} + \sum_{t=1}^{m} \beta_9 .CONTROL_{it} + \varepsilon_{it} \quad (17)$$

Where all the variables in the above equations are defined in the previous models except for "COMPL". COMPL captures the unweighted compliance score of IAS 16 (Revaluation of Property, Plant and Equipment), IAS 19 (Employee Benefits) and IFRS 7

(Financial instruments: Disclosures). The model was tested for the full sample and for the sample of low and high compliance firms. To control for factors that may influence firms' COMPL with relevant accounting disclosures, size, industry, auditor's reputation and debt are included as independent variables. These variables have enjoyed extensive usage in several studies that test determinants of COMPL with accounting disclosure (reviewed in section 2.4.3). Prior literature documents diverse findings regarding the influence of these variables on disclosure practices.

The equivocal findings in the previous studies suggest that these variables offer limited theoretical insights and their effects or otherwise could vary according to the accounting system of a given jurisdiction. The weak enforcement and cases of accounting fraud in Nigeria (ROSC, 2011), a bank-oriented economy (Okora et al., 2013), great disparity in the size of firms (ROSC, 2011) and the relatively small breath of the market (Factbook, 2011; ROSC, 2011) suggest controlling for firm characteristics. Thus, firm size, industry, auditor's reputation and debt are controlled for. Firm size has been frequently associated with firms' compliance with accounting disclosures. Even though previous studies documented equivocal evidence, firm size can be used for testing the applicability of almost all disclosure theories (Leventis, 2001) due to its continuous correlation with firms' operation.

The industry of operation of a firm has been used to proxy for the "follow-the-leader" effect. Deviations from practices that are recognised as norms within the industry can transmit different information to users of financial statements often in a form of

information asymmetry. Market participants can interpret higher compliance levels as a firm's effort to "screen" themselves from their peers, whereas lower levels of compliance can result in lower market values because market participants view firms as being "lemons" (silent about the firm's situation). Large audit firms perform higher quality audits. Auditing by Big 4 firms ensures compliance with statutory requirements, even at the expense of loss of a client because "benefits of a good reputation supersede the loss of a client. Thus, Big 4 auditing could be perceived as a means of minimizing agency costs (Jensen & Meckling, 1976; Watts & Zimmerman, 1983), resulting in higher market values. The gearing of a firm is potentially related to the compliance of firms with mandatory disclosures. As a proxy for agency costs, firms are more likely to face higher equity risk when they are highly geared (Tsalavoutas, 2009). Thus, highly geared firms should exhibit higher levels of compliance with relevant disclosures to reduce the agency cost due to a mismatch of concerns between lenders and management (Watson et al., 2002). Considering the mixed findings presented in the prior literature, no prediction regarding the coefficients of the control variables is attempted.

Statistically, the regression coefficient of β_6 is expected to be positive and statistically significant as predicted for H_{5a}. The coefficient for the earnings parameters (β_2 to β_5) and COMP (β_6) are predicted to be higher for high compliance firms as compared to low compliance firms. As a measure of perceived reliability, this suggests that investors attach different weights to the level of compliance with the relevant requirements in the determination of fair value earnings in the Nigerian market. The effect of COMPL on

investors' pricing of the items of other comprehensive income (H_{5b}) was tested using model 18, which interacts COMPL with individual item of other comprehensive income.

$$SP_{it} = \beta_0 + \beta_1 BVE\_S_{it} + \beta_2 NI\_S_{it} + \beta_3 REV\_S_{it} + \beta_4 SEC\_S_{it} + \beta_5 PEN\_S_{it} + \beta_6 COMPL_{it} + \beta_7 REV\_S_{it}{}^{*} COMPL_{it} + \beta_8 SEC\_S_{it}{}^{*} COMPL_{it} + \beta_9 PEN\_S_{it}{}^{*} COMPL_{it} + \beta_7 LNI_{it} + \beta_8 NI\_S * LNI_{it} + \sum_{t=1}^{m} \beta_9 .CONTROL_{it} + \varepsilon_{it} \quad (18)$$

To demonstrate the incremental value relevance of other comprehensive income given the level of compliance, an interaction term, β_7 to β_9 are theoretically predicted to be positive and significant to justify the effect of compliance with relevant fair value accounting standards.

4.7 Summary

This chapter has discussed the study's research method. The chapter outlined the research design, which is concerned with the requisite way data was gathered and analysed. This chapter also highlighted the measurements of the variables. It has also outlined the model for further empirical analysis. The next chapter presents the empirical analysis of the relative and incremental value relevance of comprehensive income and its components.

CHAPTER FIVE

FINDINGS AND ANALYSIS I

THE RELATIVE AND INCREMENTAL VALUE RELEVANCE TEST

5.0. Introduction

This chapter presents findings and analyses of the first two objectives of the thesis, which are: 1) to examine whether the traditional net income is more value relevant than the total comprehensive income in the Nigerian capital market, and 2) to assess whether other comprehensive income and its components provide incremental information beyond the traditional net income in the Nigerian capital market. This chapter is divided into seven sections. Section 5.1 explains the pre-test analyses of the data used in this study. Section 5.2 provides details of full sample and magnitude of earning components. Section 5.3 provides the descriptive statistics related to the regression variables. Section 5.4 provides the univariate analysis of the regression variables and comparisons of voluntary and mandatory comprehensive income reporting regimes. Section 5.5 explains the results of the multivariate analysis detailing the relationship between earnings components and market value of equities. The robustness check is presented in Section 5.6 and finally, a summary of the chapter is presented in Section 5.7.

5.1 The Pre-Tests Analyses

In analysis involving several units and cross-sections, examining the quality of the raw data is important. Many assumptions such as normality, multicollinearity, homoscedasticity and correlation are often tested to ensure unbiased regression analysis.

As Tabachnick and Fidell (2007) and Pallant (2007) recommended, these assumptions are tested to make a more reliable inference from a given data set. The following subsections discuss the application of these tests in this study.

5.1.1 Normality Test

In regression analysis, normal distribution is an important condition. However, it is equally important to note that certain random variables such as earnings distributions are not symmetrically distributed about any value (Wooldridge, 2013). As such, normally distributed data when using financial data is almost impossible because the distribution is unsystematically randomly distributed between and within firms (Wooldridge, 2013). Interestingly, this non-normality does not affect the results of ordinary least square regression in a relatively large sample study (Wooldridge, 2013). Unfortunately, "there are no general prescriptions on how big the sample size must be before the approximation is good enough" (Wooldridge, 2013, p. 157). Some econometricians posit that n=30 is satisfactory. Specifically, Tabachnick and Fedell (2013) posited that deviation from skewness and kurtosis for a dataset of more than 200 will not make an absolute difference.

Despite these theoretical justifications, a further test of normality was conducted. First, a normality test was performed by checking the skewness and kurtosis values of the variables. While skewness[1] measures the probability distribution of variable with respect

[1] A measure of how far a distribution is from being symmetric (Wooldrige, 2013)

to its mean value, kurtosis[2] measures the peakedness of a given variable in terms of its probability distribution (Wooldrige, 2013). As a benchmark for a normal dataset or nearly normal for unbiased inference, Field's (2005) rule of thumb suggests a skewness of +/-1.96 and kurtosis of +/-3.29. Furthermore, Kline (2016) asserts that a skewness value of more than 3 and kurtosis value of more than 10 signals a problem. As presented in Panel A of Table 5.1, the skewness of SP for sample of financial and nonfinancial firms are 1.81 and 2.11, while RET is between 2.07 and 0.74. On the other hand, the kurtosis values for the SP for the two samples are 5.45 and 6.56 whereas 6.82 and 2.29 were recorded for RET. On average, these statistics were slightly above the Field's (2005) rule of thumb, but within the benchmark provided by Kline (2016). For most of the explanatory variables, the skewness and kurtosis deviated from their theoretical predictions.

According to Cahan et al. (2000), normally distributed data is almost impossible when using accounting data due to great disparity in the characteristics of firms. However, to achieve a more acceptable data set for regression analysis motivates winsorization of the dataset at 2 percent similar to Barth et al. (2012), Kubota et al. (2011) and Mechelli and Cimini (2014). Using this technique, any abnormal observations in the dependent variables (share price and stock return) more than the 98 percent or less than 2 percent level of each variable were replaced with the same value at these 98 or 2 percentile values. Consistent with Kubota et al. (2011), Barth et al. (2012) and Mechelli and Cimini (2014), the same approach was employed to construct all independent variables to mitigate the effect of outliers on the statistical inferences.

[2] Measure of the thickness of the tails of a distribution (Wooldrige, 2013).

Table 5.1

Skewness and Kurtosis of the Variables Deflated by Outstanding Shares and Beginning Market Value of Equities Before and After Winsorization for 2010-2014.

	Panel A: Before Winsorization				*Panel B: After Winsorization*			
	Financial firms		*Nonfinancial firms*		*Financial firms*		*Nonfinancial firms*	
Variables	Skew	Kurtos	Skew	Kurtos	Skew	Kurtos	Skew	Kurtos
Variables used in the Price Model								
SP_{it}	1.81	5.45	2.11	6.56	0.52	1.86	0.33	2.03
BVE_S_{it}	1.87	4.97	2.64	9.93	0.54	2.67	0.01	3.40
NI_S_{it}	0.37	7.45	2.14	6.85	0.46	2.26	0.29	2.68
CI_S_{it}	3.33	20.15	1.91	5.75	0.04	2.91	0.17	2.34
OCI_S_{it}	-3.61	23.59	0.90	6.38	-1.01	2.79	0.68	2.67
REV_S_{it}	3.26	13.98	4.77	38.58	-1.45	5.83	-0.68	3.12
SEC_S_{it}	0.86	12.79	-1.11	31.9	-0.34	2.35	-0.24	2.30
PEN_S_{it}	1.24	40.50	-0.17	15.51	0.01	2.32	-0.59	2.16
LNI_{it}	1.60	3.58	1.73	4.00	-	-	-	-
LCI_{it}	1.54	3.37	1.86	4.47	-	-	-	-
$LOCI_{it}$	0..99	1.99	0.74	1.54	-	-	-	-
Observations	123	123	226	226	123	123	226	226
Variables used in the Return Model								
RET_MC_{it}	2.07	6.82	0.74	2.29	0.54	1.89	-0.52	1.94
NI_MC_{it}	1.73	9.07	3.35	23.07	-1.44	8.11	0.19	3.80
CI_MC_{it}	3.78	19.64	2.52	8.21	-0.10	2.61	0.16	3.05
OCI_MC_{it}	-1.69	6.40	2.18	8.73	-2.22	10.08	-0.45	2.46
REV_MC_{it}	4.06	22.26	1.78	14.11	-1.09	5.27	-0.57	2.16
SEC_MC_{it}	0.83	12.21	2.31	16.10	-0.30	2.22	-0.08	2.20
PEN_MC_{it}	6.84	68.36	1.93	17.28	-0.19	1.96	-0.21	2.25
LNI_{it}	1.61	3.58	1.73	4.00	-	-	-	-
LCI_{it}	1.54	3.37	1.86	4.47	-	-	-	-
$LOCI_{it}$	0.99	1.99	0.74	1.54	-	-	-	-
Observations	89	89	152	152	89	89	152	152

Notes: SP_{it} = four-month share price after the financial year-end; BVE_S_{it} = per share book value of common equity; NI_S_{it} = net income per share*;* CI_S_{it} = comprehensive income per share; OCI_S_{it} = other comprehensive income per share; REV_S_{it} = changes in revaluation surplus per share; SEC_S_{it} = changes in gains and losses on re-measuring available-for-sale financial assets per share; PEN_S_{it} = actuarial gains and losses on defined benefit plans per share; LNI_{it}; LCI_{it} and $LOCI_{it}$ are indicator variables assigned a value of 1 if negative earnings and 0 if otherwise and *i* and *t* refer to firm and year.

RET_{it} = stock returns (inclusive of dividends) for the year ended 4 months after the fiscal yearend; NI_MC_{it} = net income deflated by the beginning price of common equity*;* CI_MC_{it} = total comprehensive income deflated by the beginning price of common equity; OCI_MC_{it} = other comprehensive income deflated by the beginning price of common equity; REV_MC_{t} = changes in revaluation surplus deflated by the beginning price of common equity; SEC_MC_{it} = changes in gains and losses on re-measuring available-for-sale financial assets deflated by the beginning price of common equity; PEN_MC_{it} = actuarial gains and losses on defined benefit plans deflated by the beginning price of common equity; and *i* and *t* refer to firm and year.

Notes than LNI_{it}; LCI_{it} and $LOCI_{it}$ are dummy variables taking the value of 0 and 1, as such, were not winsorized.

Thus, the winsorized dataset presented in Panel B of Table 5.1 demonstrate nearly normal data because the Z-values of most of the variables fall between ±1 and ±3 for skewness and kurtosis respectively. The exception were a few variables with Z-values above the threshold of ±1 and ±3, but lower than 3 and 10 posited by Kline (2016) for a normal dataset. Overall, the distribution of the variables is within the required normal distribution, hence, normality was assumed.

5.1.2 Homoscedasticity Test

The second quality test is homoscedasticity that describes the homogeneity of the variance. In value relevance research, it is widely acknowledged that the price model is prone to heteroskedastic specification error (Kothari & Zimmerman, 1995), which could lead to a misleading inference (Petersen, 2009; Tsalavoutas et al., 2012; Kim, 2013). To ensure that the conclusions from the analysed data does not violate homoscedasticity assumption, "heteroskedasticity-consistent covariance matrix estimator 3 (HC3)" was utilized. This was done for all models even in the absence of detected heteroskedasticity as MacKinnon and White (1985) recommended and implemented in Tsalavoutas et al. (2012). The HC3 heteroskedastic correction method produces more conservative confidence intervals, which make it more appropriate than White's (1980) basic method (MacKinnon & White, 1985; Tsalavoutas et al., 2012). For all models in which the heteroskedasticity-consistent covariance matrix estimator 3 (HC3) detected a violation of the homoscedasticity assumption, a further test for the likelihood of firm fixed effect and time effect was performed. The presence of heteroskedastic in some estimations was driven by the firm's unobserved fixed effect. As a corrective measure, these models are

re-estimated using OLS standard errors clustered at the firm level as Petersen (2009) and Wooldridge (2013) suggested.

Scale bias is another frequently cited problem that may violate the homoscedasticity assumption when using the price model. Following Hung and Subramanyam (2007), Barth et al. (2008), Tsalavoutas et al. (2012) and Mechelli and Cimini (2014), the parameters were re-estimated using the beginning price of equity as the deflator for the sensitivity analysis. Following these procedures, no violation of homoscedasticity was assumed.

5.1.3 Multicollinearity test

In regression analysis, a multicollinearity problem may exist. Multicollinearity manifests itself when the explanatory variables are highly correlated with each other as indicated by a Pearson coefficient that is greater than 0.7 (Pallant, 2007). The existence of such a problem reduces the fitness of regression model, hence reduces the predictive power of any independent variable to the extent to which it is linear to other independent variables (Pallant, 2007). In this study, two assumptions were employed to check for the presence of multicollinearity problems. The first technique focused on the values of tolerance and Variance Inflation Factors (VIF). The second method was by checking the values of the correlation between one explanatory variable to another (Pallant, 2007; Wooldridge, 2013). Table 5.2 delineates the multicollinearity tests of the regression variables by correlation.

Based on the correlation matrix presented in Table 5.2, no evidence of a serious multicollinearity problem exists. This assumption was also used to establish the linear association between the variables except for NI and CI for nonfinancial firms. However, such does not pose any problems because the variables are tested in different models.

Table 5.2
Multicollinearity Test by Correlations

			BVE_{it}	NI_{it}	CI_{it}	OCI_{it}	REVit	SECit	PENit
Panel A: Financial Firms									
BVE_{it}	N	123	1	0.11	0.13	-0.10	-0.100	-0.12	-0.03
NI_{it}	N	123	0.11	1	0.15*	0.14*	-0.04	0.08	-0.01
CI_{it}	N	123	0.13	0.15*	1	-0.02	-0.07	-0.07	0.01
OCI_{it}	N	123	-0.10	0.11	-0.05	1	0.38	0.43	0.29
REVit	N	43	-0.10	-0.0	-0.07	0.38	1	-0.06	0.01
SECit	N	98	-0.12	0.08	-0.07	0.43	-0.06	1	0.01
PENit	N	32	-0.03	-0.01	0.01	0.29	0.01	0.15	1
Panel B: Nonfinancial Firms									
BVE_{it}	N	226	1	0.14	0.08	-0.05	-0.06	-0.03	0.09
NI_{it}	N	226	0.14	1	0.87	-0.15	-0.07	0.01	-0.03
CI_{it}	N	226	0.08	0.87	1	-0.11	-0.04	0.14	-0.01
OCI_{it}	N	226	-0.05	-0.15	-0.11	1	-0.27	0.02	0.01
REVit	N	63	-0.06	-0.06	-0.04	0.25	1	-0.09	
SECit	N	106	-0.03	0.01	0.14	0.02	-0.09	1	0.08
PENit	N	146	0.10	-0.03	-0.01	0.004	-0.05	0.08	1

Notes: Table 5.2 presents the correlation coefficients for the multicollinearity test of earnings components. BVE_{it} = book value of common equity; NI_{it}= net income; CI_{it} = comprehensive income; OCI_{it} = other comprehensive income; REVit = changes in revaluation surplus; SECit = changes in gains and losses on re-measuring available-for-sale financial assets; PENit = actuarial gains and losses on defined benefit plan.

To further assess the potential for multicollinearity, tolerance and VIF have been calculated for all estimations and for individual variables. Table 5.3 delineates the values of tolerance and VIF for earnings components. While the tolerance ranged from 0.82 to 0.99 for variables scaled by the outstanding shares, the value ranged from 0.29 to 0.99 for variables deflated by the beginning price of equity. Table 5.3 also reveals that all estimations had a mean VIF of less than 5 percent and most variables scored less than 2.

Table 5.3
Multicollinearity Test by Tolerance and Variance Inflation Factors (VIF)

Financial Firms		BVE	NI	CI	OCI	LNI	LCI	LOCI	REV	SEC	PEN	Mean VIF
Eq. 6a	Tolerance	0.90	0.93			0.96						
	VIF	1.11	1.07			1.03						1.06
Eq. 6b	Tolerance	0.97		0.97			0.97					
	VIF	1.03		1.03			1.03					1.08
Eq. 7a	Tolerance		0.88			0.29						
	VIF		1.14			3.45						2.82
Eq. 7b	Tolerance			0.96			0.27					
	VIF			1.05			3.68					206
Eq. 9	Tolerance	0.83	0.88		0.89	0.96		0.80				
	VIF	1.21	1.13		1.12	1.04		1.25				1.14
Eq. 10	Tolerance		0.88		0.93	0.29		0.91				
	VIF		1.13		1.07	3.40		1.10				1.74
Eq.11	Tolerance	0.91	0.82			0.96			0.84	0.98	0.98	
	VIF	1.10	1.22			1.04			1.18	1.02	1.02	1.09
Eq.12	Tolerance		0.92			0.82			0.92	0.93	0.93	
	VIF		1.08			1.23			1.08	1.07	1.08	1.11
Nonfinancial Firms												
Eq. 6a	Tolerance	0.96	0.97			0.99						
	VIF	1.04	1.03			1.03						1.03
Eq. 6b	Tolerance	0.95		0.99			0.99					
	VIF	1.05		1.01			1.04					1.03
Eq. 7a	Tolerance		0.92			0.93						
	VIF		1.08			1.01						1.04
Eq. 7b	Tolerance			0.97			0.95					
	VIF			1.03			1.01					1.03
Eq. 9	Tolerance	0.95	0.91		0.99	0.96		0.95				
	VIF	1.05	1.09		1.05	1.04		1.01				1.04
Eq. 10	Tolerance		0.86		0.98	0.92		0.95				
	VIF		1.16		1.02	1.08		1.06				1.04
Eq.11	Tolerance	0.93	0.95			0.96			0.97	0.98	0.99	
	VIF	1.07	1.04			1.04			1.03	1.02	1.01	1.04
Eq.12	Tolerance		0.91			0.91			0.88	0.88	0.96	
	VIF		1.09			1.09			1.13	1.13	1.04	1.05

Notes: Table 5.3 delineates the tolerance (TOL) and Variance Inflation Factor (VIF) for the multicollinearity test for earnings components. BVE_{it} = book value of common equity; NI_{it} = net income; CI_{it} = comprehensive income; OCI_{it} = other comprehensive income; REVit = changes in revaluation surplus; SECit = changes in gains and losses on re-measuring available-for-sale financial assets; PENit = actuarial gains and losses on defined benefit plans and *i* and *t* refer to firm and year. While the values for Eq. 6a, 6b, 9 and 11 are deflated by the outstanding share prices when the dependent variable is SP_{it}, Eq. 7a, 7b, 10 and 12 are divided by the beginning price of equity when the RET_{it} is the dependent variable.

This again indicates that no serious multicollinearity problem exists[1]. These values demonstrate the absence of multicollinearity among earnings components.

[1] If Variance Inflation Factors (VIF) is more than 10, then a multicollinearity problem exists for estimating certain parameters (Wooldridge, 2013).

5.1.4 No Specification Bias or Errors

One quality test of regression analysis is to ensure that the regression model is correctly specified. This assumption "assumes implicitly, if not explicitly, that the model used to test an econometric theory is correctly specified" (Gujarati, 2004, p. 73). Violation of this assumption "by omitting important variables from the model, or by choosing the wrong functional form, or by making wrong stochastic assumptions about the variable of the model" (Gujarati, 2004, p. 73) would compromise the validity of estimated regressions. For all estimations used in this study, model specification test was performed using a link test. A link test that produces the variable of prediction, _hat, and the variable of squared prediction, _hatsq (Pregibon, 1979). _hat is expected to be significant, whereas _hatsq is expected to be insignificant. Fulfilling these conditions as presented for every regression in the subsequent sections suggests that the regression models are correctly specified.

Linearity was not performed in this study. According to Gujarati (2004), linearity is not a necessary condition for a data set that combined cross-sectional and time series. Other assumptions, such as zero covariance between regressors, observations greater than the parameters and variability among variables are automatically fulfilled because of the nature of the data used in this study. A condition of zero covariance was automatically attained because the independent variables were non-random variables (Gujarati, 2004). More so, the number of observations used in this study was greater than the number of parameters estimated for all regressions. Again, the assumption of variability was achieved automatically[2] because share price and stock returns substantially differ from

[2] "Researchers should keep in mind that variation in X and Y variables is essential to use regression analysisas as a tool" (Gujarati, 2004, p.73).

the book value of equity, net income, comprehensive income, components of other components and other nonfinancial information. Such variability allows researchers to explain variations among variables of interest. Overall, the pre-tests analyses conducted indicate the validity of a statistical inference of the regression estimation because no severe evidence was found to doubt the models used in this study.

5.2 Details of Full Sample and Magnitude of Earnings Components

Sample selection was based on the procedures described earlier in Chapter Four, Section 4.3.2. Given that the components of comprehensive income are zero in expectation, an additional condition, which imposes that at least one item is non-zero was assumed following Kanagaretnam et al. (2009), Kubota et al. (2011), Lee and Park (2013) and Mechelli and Cimini (2014). This is to ensure that a unit of analysis has at least one or a combination of: 1) fair value gains and losses on the non-current assets, 2) fair value gains and losses on available-for-sale financial assets, and 3) actuarial gains and losses. The presence of one or a combination of the above items makes the net income different from the comprehensive income. Based on these criteria, a sample was drawn from 117 firms comprising 36 financial firms (123 firm-year observations) and 81 non-financial firms (226 firm-year observations) that yielded a total sample of 349 firm-year observations.

Table 5.4, Panel A presents the mean (median) values of the book value of equity, net income, comprehensive income and other comprehensive income in billions of Nigerian Naira (₦) based on 123 financial firm-year observations. The first column reports the

mean (median) book value of equity, which ranged from ₦26.00 (₦12.6) billion in 2012 to ₦74.50 (₦42.10) billion in 2010 reflecting their typical asset base. Panel B presents similar statistics for the sample of nonfinancial firms, which ranged from ₦21.50 (₦13.30) billion in 2010 to ₦64.80 (₦38.40) billion in 2011. These statistics indicate that both financial and non-financial firms, on average, have a large book value of equity, with a skewed distribution based on the median values. This is expected given the small number of firms in Nigerian with great disparity in size[3].

The next two columns in Panel A present the average (median) net income per share and per beginning market price for financial firms. The value for this variable ranged from –₦12.40 (₦1.40) billion in 2014 to ₦24.90 (₦9.60) billion in 2010; and ₦23.20 (₦11.4) billion in 2012 to ₦51.00 (₦6.61) billion in 2010 respectively. The next two columns in panel B presented the mean (median) net income of nonfinancial firms. It is obvious from the table that the mean value decreased in 2011 before it sharply increased to ₦86.20 (₦13.10) billion in 2012, decreased again to ₦54.90 (₦19.80) in 2013 and closed at ₦84.90 (₦12.70) billion per share in 2014. The sudden increase observed in 2012 could be attributed to the transition to IFRS. The net income deflated by the beginning price of equity to some extent, exhibited an identical trend with those deflated by the outstanding shares except that the mean (median) was negative –₦3.40 -(₦8.20) billion in 2011. This statistic suggests that the sample firms, on average, experienced a positive net income

[3] The presence of some firms with larger or lower accounting amounts reflects reasons motivating winsorization to mitigate the effect of outliers. For these differences, additional tests were conducted in this section and the pooled sample in the subsequent section controlled for firm size.

Table 5.4

Frequency and Magnitude of Net Income, Comprehensive Income and Other Comprehensive Income by Year and Industry, 2010-2014

Columns/Variables Years/Industry	1 BVE_S	2 NI_S	3 NI_MC	4 CI_S	5 CI_MC	6 OCI_S	7 OCI_MC	8 OBS
Panel A:Financial firms	Mean (Median)	Mean (Median	Mean (Median)	Mean (Median)	Mean (Median)	Mean (Median)	Mean (Median)	**Count**
2010	0.745 (0.421)	0.249 (0.096)	0.510 (0.061)	0.270 (0.124)	0.690 (0.137)	0.023 (0.015)	0.311 (0.312)	18
2011	0.404 (0.129)	0.169 (0.048)	0.377 (0.211)	0.295 (0.123)	0.391 (0.075)	0.010 (0.003)	0.180 (0.159)	15
2012	0.260 (0.126)	0.185 (0.052)	0.268 (0.247)	0.180 (0.130)	0.255 (0.145)	0.013 (0.014)	0.190 (0.249)	27
2013	0.354 (0.126)	0.137 (0.028)	0.361 (0.254	0.172 (0.115)	0.387 (0.116)	-0.009 -(0.006)	-0.023 (0.234)	37
2014	0.351 (0.148)	0.124 (0.014)	0.232 (0.114)	0.314 (0.086)	0.546 (0.080)	0.013 (0.002)	0.111 (0.265)	26
Total	0.370 (0.133)	0.161 (0.038)	0.282 (0.189)	0.240 (0.116)	0.419 (0.098)	0.012 (0.006)	0.139 (0.29)	123
Panel B Nonfinancial firms								
2010	0.215 (0.133)	1.186 (0.133)	0.134 (.100)	1.246 (0.231)	0.121 (0.08)	0.017 (0.004)	0.038 (0.01)	28
2011	0.648 (0.384)	0.666 (0.223)	-0.034 (0.082)	0.825 (0.245)	0.433 (0.120)	0.027 (0.005)	0.029 (0.003)	24
2012	0.454 (0.338)	0.862 (0.131)	0.471 (0.106)	1.138 (0.226)	0.581 (0.146)	0.022 (0.005)	0.029 (0.007)	62
2013	0.457 (0.355)	0.549 (0.198)	0.425 (0.084)	0.862 (0.243)	0.478 (0.008)	0.026 (0.014)	0.012 (0.007)	53
2014	0.556 (0.285)	0.849 (0.127)	0.617 (0.091)	0.893 (0.133)	0.512 (0.104)	0.013 (0.008)	0.013 (0.001)	59
Total	0.495 (0.338)	0.771 (0.185)	0.416 (0.096)	0.964 (0.236)	0.489 (0.109)	0.021 (0.007)	0.022 (0.004)	226

Notes: Table 5.4 provides the descriptive statistics of regression variables scaled by outstanding share and beginning price of equity. The variables include: BVE_S_{it} = the book value of common equity scaled by the number of shares outstanding; NI_S_{it} = net income per share*;* CI_S_{it} = comprehensive income per share; OCI_S_{it} = other comprehensive income per share*;* NI_MC_{it}: net income deflated by the beginning price of common equity; CI_MC_{it} = comprehensive income deflated by the beginning price of common equity; OCI_MC_{it} = other comprehensive income deflated by the beginning price of common equity and *i* and *t* refer to firm and year. Count= is the yearly observations in which the earnings components have the same frequency due to the additional condition of presence of at least one item of other comprehensive income. OBS= firms-year observations.

while losses were not persistent during the sample period. From the right, columns 4 and 5 Panel A and B report the statistics of comprehensive income.

In the case of financial firms, the mean (median) per share during the period indicated an increasing trend from ₦27.00 (₦12.40) billion in 2010 to ₦29.50 (₦12.30) in 2011 and a sudden decrease to ₦18.00 (₦13.00) billion in 2012 before it increased to ₦31.40 (₦8.60) billion in 2014. The means and the median values obtained when the beginning price was the denominator were greater in 2010 (₦69.00 (₦13.70)) when reporting of other comprehensive income was voluntary. However, they are more suitable than the net income based on a similar scale. The data in columns 4 and 5 demonstrated that comprehensive income of nonfinancial firms exhibited a random walk throughout the sample period with the highest mean of ₦124.60 billion in 2010 and lowest of ₦89.30 in 2011. On average, the values were higher than those of the net income (columns 2 and 3) and the equivalent measure for the financial institutions.

Columns 6 and 7 of Panel A Table 5.4 show the mean (median) values of other comprehensive income for financial firms. The mean (median) ranged from ₦2.30 (₦1.51) billion in 2010 to lowest of ₦1. 10 (₦0.30) billion in 2011. In the year 2013, the mean was negative, suggesting that the sample companies recorded a fair value loss of ₦0.90 (₦0.60) billion. When the other comprehensive income was deflated by the beginning price of equity, the mean (mean) values were consistently positive, which indicates fair value gains. The exception is 2013 with a negative mean value of -₦2.30. Assuming that fair value loss above is expressed in percentage, it could suggest that fair

value loss of 2.30 percent is somewhat elevated as compared to 0.002 documented in Dhaliwal et al. (1999), but similar to the study of Jones and Smith (2011) that documented an average loss of other comprehensive income to be 2.20 percent and less than 3.42 percent in the study of O'Hanlon and Pope (1999). The differences in these results may be due to differences in the sample period, sample selection criteria and context of the study. The sample period of this study preceded the period of economic meltdown and, given the fact that financial institutions were severely affected, the results of this study are striking. Looking closely at Figure 5.1A and 5.1B, the value of other comprehensive continuously lies below the net income and comprehensive income, perhaps due to the infrequent nature of components of other comprehensive income.

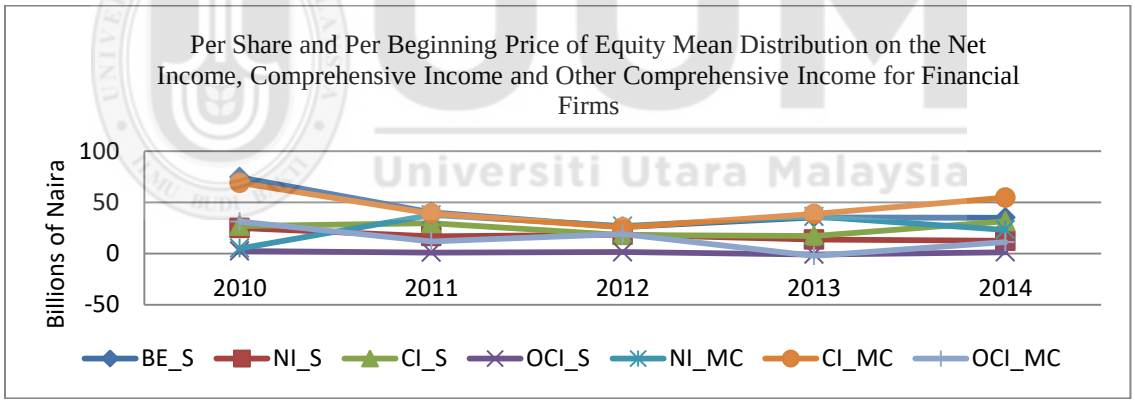


Figure 5.1A

Per Share and Per Beginning Price of Equity Mean Distribution on the Net Income, Comprehensive Income and Other Comprehensive Income for Financial Firms.

Furthermore, other comprehensive income per share of the sample of nonfinancial firms in column 6 of Panel B shows a positive mean of between ₦1.70 (₦0.40) billion in 2010 to ₦2.70 (₦0.50) billion 2012. The table shows that per share means followed a random walk throughout the years supporting the transitory nature of other comprehensive

income items. Likewise, column 7 Panel B reveals small variations in the mean (median) between the years and the mean (median) was consistently decreasing throughout the sample period. Unlike negative means observed for financial firms, the mean and median values using the sample of nonfinancial firms was positive for all years.

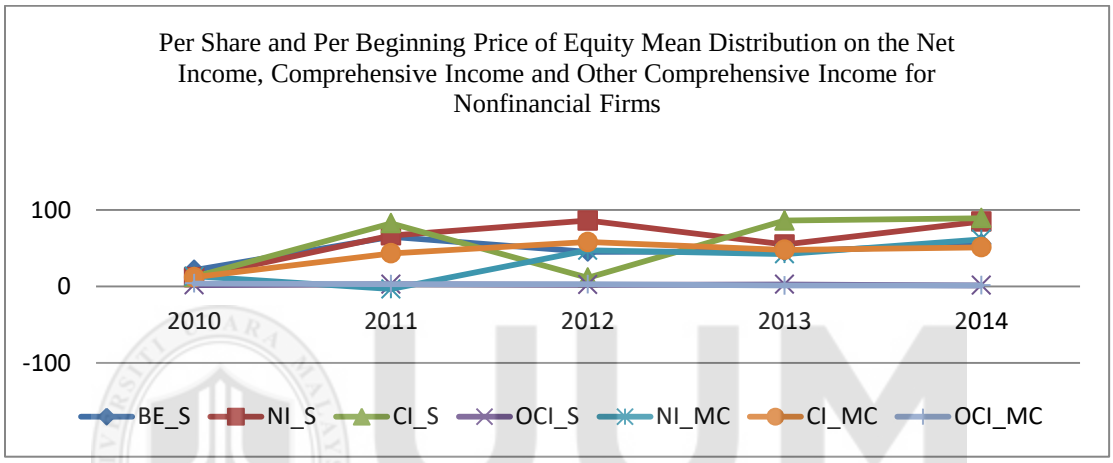


Figure 5.1B

Per Share and Per Beginning Price of Equity Mean Distribution on the Net Income, Comprehensive Income and Other Comprehensive Income for Nonfinancial Firms

Table 5.5 Panel A reports the yearly mean (median) of the components of other comprehensive income, such as fair value gains and losses on the non-current assets, available-for-sale financial assets and actuarial gains and losses. As presented in column 1 Panel A, the sample firms, on average, reported fair value gain on non-current assets per share of between ₦0.07 billion in 2011 to ₦0.06 billion in 2012. Column 2 shows that the fair value changes on non-current assets deflated by the beginning price of equity exhibited similar trends with per share measures based on the lower mean of ₦0.02 billion in 2010 and higher of ₦0.09 billion in 2012. In the case of nonfinancial firms in Panel B, column 1, the yearly mean indicated a decreasing trend from ₦0.22 billion in

2010 to ₦0.13 billion in 2013 and dropped sharply to ₦0.04 billion in 2014. This is not the case for per market value of equity in column 2, which indicates a random movement with large differences between the periods (see Figure 5.2B). The results of reduced mean in the later years for the subsamples of firms is not surprising because firms may have different policies and periods for revaluing their non-current assets.

The statistics in columns 4 and 5, Panel A show fair value gains and losses on re-measuring available-for-sale financial assets concerning financial firms. Looking at the table, the medians were almost zero for all the years. Firms reported fair value gains on available-for-sale securities of approximately ₦0.14 billion in 2010 to –₦0.09 billion in 2013 likewise in 2011 for the two deflators. This implies that, on average, the sample firms had fair value losses in 2011 and 2013 respectively. Columns 4 and 5 of Panel B depict similar statistics for nonfinancial firms, which range between ₦0.13 to -₦0.09 billion in 2011 and 2010 and the measure exhibited a random walk. Similar to those of financial firms, the mean values in 2013 as well as 2010 for both denominators were negative, which means that sample firms reported fair value losses on available-for-sale in 2010 and 2013. These losses are unexpected because the decline in the wider market environment could cause volatility in the market value of financial assets and consequently reduces its worth for the valuation of firms (Kubota et al., 2011). Figures 5.2A and 5.2B demonstrate the yearly mean distributions of the earnings components for financial and nonfinancial firms between 2010 to 2014.

Table 5.5

Frequency and Magnitude of Components of Other Comprehensive Income by Year and Industry, 2010-2014

Columns/ Variables	1	2	3	4	5	6	7	8	9
Years/Industry	REV_S	REV_MC	OBS	SEC_S	SEC_MC	OBS	PEN_S	PEN_MC	OBS
Panel A: Financial firms	Mean (Median)	Mean (Median)		Mean (Median)	Mean (Median)		Mean (Median)	Mean (Median)	
2010	0.003	0.002	3	0.014	0.0264	7	0.0080	0.001	2
	(0.000)	(0.000)		(0.006)	(0.013)		(0.0080)	(0.000)	
2011	0.007	0.010	11	-0.0004	-0.001	13	0.003	-0.001	4
	(0.000)	(0.000)		(0.000)	(.0000)		(0.000)	(0.000)	
2012	0.006	0.009	11	0.004	0.007	27	-0.001	-0.001	9
	(0.000)	(0.000)		(0.001)	(0.000)		(0.0010)	(0.000)	
2013	0.004	0.003	8	-0.009	-0.009	26	-0.002	0.001	7
	(0.007)	(0.000)		(0.001)	(0.000)		(0.0003)	(0.000)	
2014	0.005	0.006	10	-0.005	-0.004	25	0.003	0.003	10
	(0.006)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)	
Total	0.0193	0.007	43	0.004	0.005	98	0.0005	0.001	32
	(0.008)	(0.000)		(0.0008)	(0.000)		(0.0001)	(0.000)	
Panel B Nonfinancial firms									
2010	0.0224	0.0024	5	-0.009	-0.002	10	0.018	-0.004	5
	(0.003)	(0.003)		(0.0008)	(0.002)		(0.009)	(0.004)	
2011	0.012	0.003	8	0.013	0.004	11	0.008	0.007	23
	(0.004)	(0.004)		(0.003)	(0.001)		(0.003)	(0.000)	
2012	0.010	0.005	15	0.006	0.004	27	0.003	-0.004	41
	(0.000)	(0.000)		(0.002)	(0.002)		(0.003)	(0.0007)	
2013	0.013	0.003	18	-0.002	-0.004	28	0.003	0.008	37
	(0.001)	(0.001)		(0.003)	(0.001)		(0.002)	(0.0001)	
2014	0.004	0.003	17	0.003	0.008	30	0.005	0.001	40
	(0.001)	(0.001)		(0.001)	(0.000)		(0.001)	(-0.002)	
Total	0.010	0.003	63	0.005	0.004	106	0.005	0.005	146
	(0.000)	(0.0100)		(0.002)	(0.001)		(0.006)	(0.000)	

Notes: REV_S_{it} = changes in revaluation surplus per share; SEC_S_{it} = changes in gains and losses on re-measuring available-for-sale financial assets per share; PEN_S_{it} = actuarial gains and losses on defined benefit plans per share; REV_MC_{it} = changes in revaluation surplus deflated by the beginning price of equity; SEC_MC_{it} = changes in gains and losses on re-measuring available-for-sale financial assets deflated by the beginning price of equity; PEN_MC_{it} = actuarial gains and losses on defined benefit plans deflated by the beginning price of equity; OBS= firms-year observations and firms and *i* and *t* refer to firm and year.

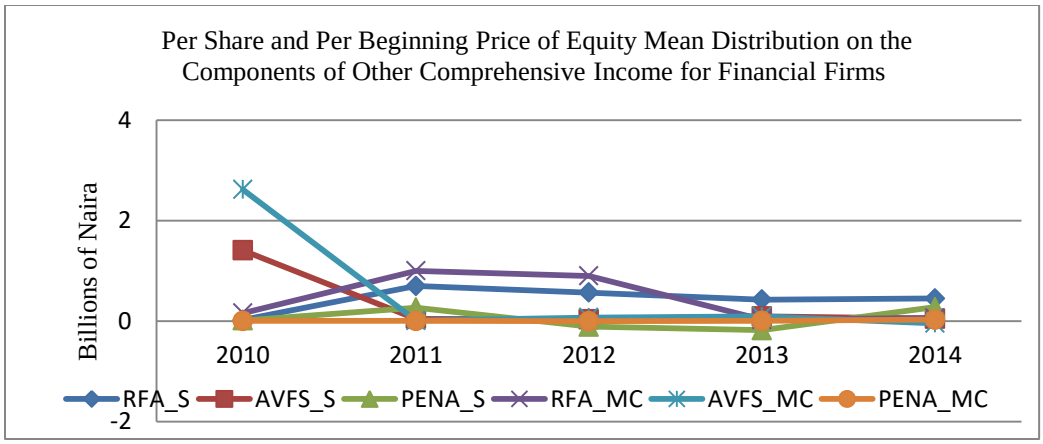


Figure 5.2A
Per Share and Per Beginning Price of Equity Mean Distribution on the Components of Other Comprehensive Income for Financial Firms.

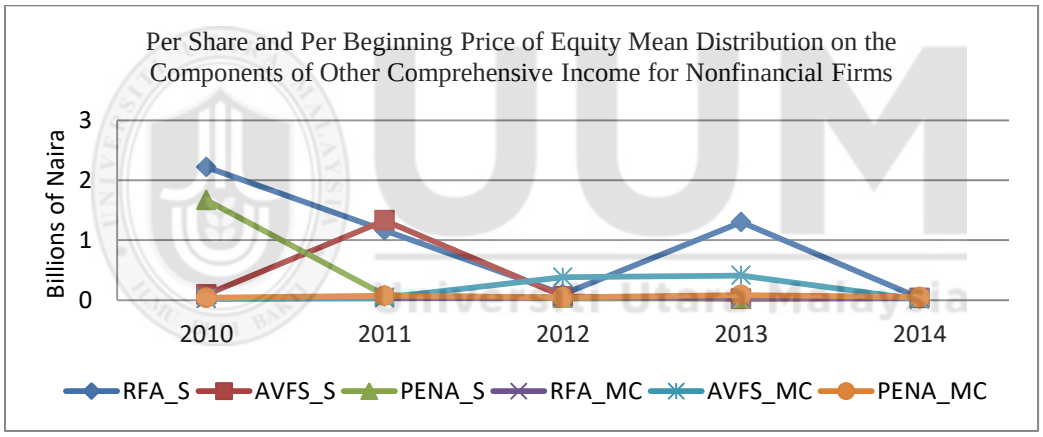


Figure 5.2B
Per Share and Per Beginning Price of Equity Mean Distribution on the Components of Other Comprehensive Income for Nonfinancial Firms

Columns 7 and 8 Panel A and B of Table 5.5 depict the fair value of actuarial gains and losses per share and per beginning price of equity. Based on the sample of nonfinancial firms, per beginning value of equity mean exhibited negative means between 2010 and 2012 given mean values of -₦0.04. The mean values were negative in 2012 and closed at ₦0.05 billion in 2014. The trend was decreasing for per share value as the actuarial gains

declined consistently from ₦0.18 in 2010 to ₦0.05 billion in 2014. Comparing the variable between the samples, the statistics for the sample of financial firms were relatively low for both proxies and did not measure up to the sample of nonfinancial firms. However, both sub-sample experienced actuarial losses in 2012 and 2013. In both theory and practice, positive or negative values are unexpected. When a given market is unfavourable, reporting entities are likely to record additional minimum pension liabilities due to a write down required in fair value accounting (IAASB, 2008).

Overall, a common feature from the above descriptive analyses of the components of other comprehensive income and as demonstrated in Figure 5.2A and 5.2B, the items, on average, do not follow a specific pattern hence supporting their transitory nature. The analyses also demonstrated that the sample firms did disclose other comprehensive income; however, their magnitude, signs and the frequency vary across years and industry.

Table 5.6, Panel A reports the frequency and signs of the components of other comprehensive income. Firm-year observations relating to each component were presented in the first column. Looking closely at the yearly means, the data is skewed to the right and slightly higher in 2012, which mean more disclosure of other comprehensive income. The subsequent most frequently reported components for financial firms during the sample period is re-measuring of the available-for-sale financial assets with 7, 13, 27, 26 and 25 firm-year observations. For nonfinancial firms for the period, 10, 11, 27, 28 and 30 firm-year observations were documented.

Table 5.6
The Frequency and Signs of Components of Other Comprehensive Income by Year and Type

Years	2010	2011	2012	2013	2014	Total
Financial firms						
Panel A: Non-current assets						
Total	3	11	11	8	10	43
Positive	3	8	9	8	8	36
Negative	0	3	2	0	2	7
Panel B: Available-for-sale financial assets						
Total	7	13	27	26	25	98
Positive	4	6	16	19	15	60
Negative	3	7	11	7	10	38
Panel C: Actuarial gains and losses						
Total	2	4	9	7	10	32
Positive	0	1	6	4	6	17
Negative	2	3	3	3	4	15
Nonfinancial Firms						
Panel A: Non-current assets						
Total	5	8	15	18	17	63
Positive	5	6	11	13	13	48
Negative	0	2	4	5	4	15
Panel B: Available-for-sale financial assets						
Total	10	11	27	28	30	106
Positive	4	5	12	15	19	55
Negative	6	6	15	13	11	51
Panel C: Actuarial gains and losses						
Total	5	23	41	37	40	146
Positive	4	16	22	24	31	97
Negative	1	7	19	13	9	49

Comparing the frequency of the items of other comprehensive income, actuarial gains and losses on defined benefit plans seems to be lowest items for financial firms based on the frequency of 2, 4, 9, 7 and 10 firm-year observations. This items are more common among nonfinancial firms given yearly observations of 5, 23, 41, 37 and 40 as compared to financial firms.

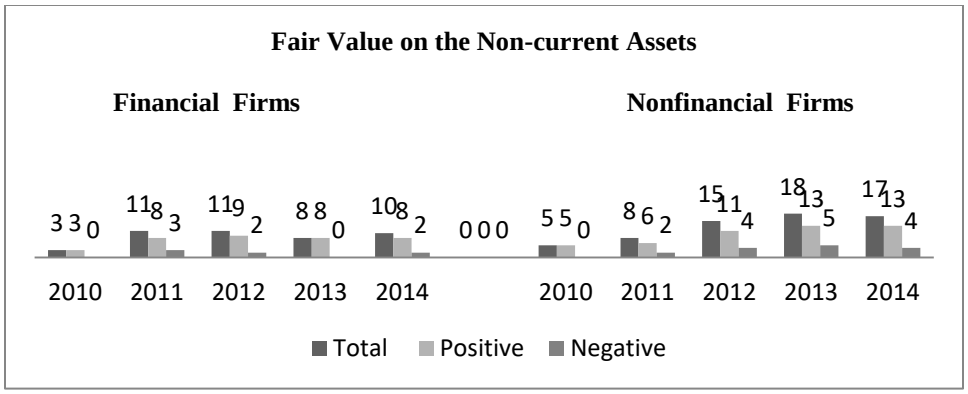


Figure 5.3A
Fair Value on the Noncurrent Assets

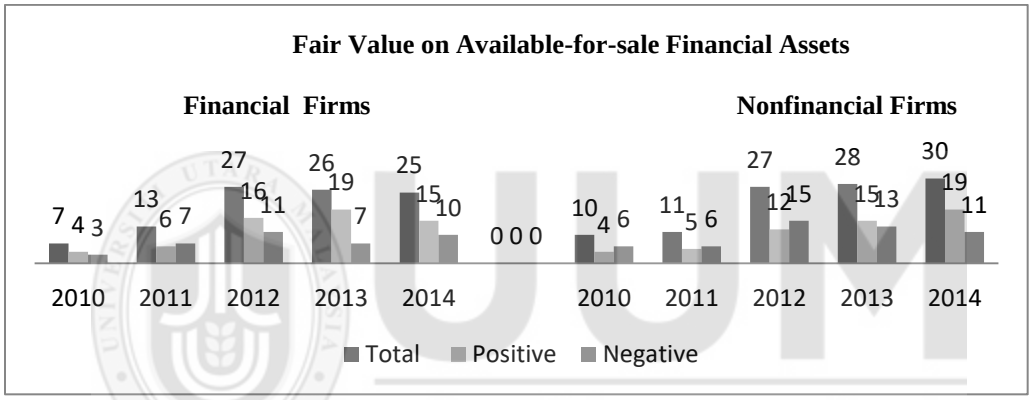


Figure 5.3B
Fair Value on Available-for-sale Financial Assets

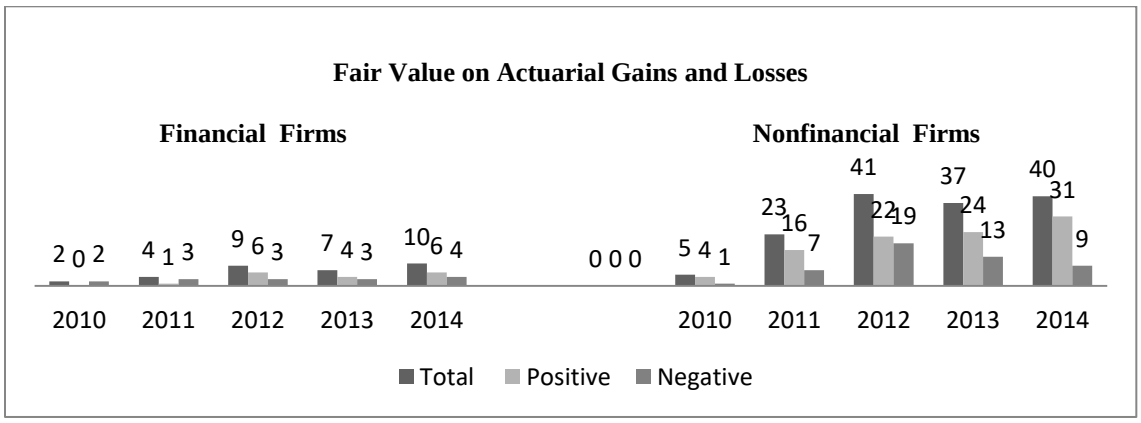


Figure 5.3C
Fair Value on Actuarial Gains and Losses

Overall, an analysis of the frequency of other comprehensive income items suggests that their reporting predates 2012, but the disclosure was more under the mandatory regime. This could signal some level of transition from NG-GAAP to IFRS standards.

5.3 Descriptive Statistics Related to the Regression Variables

Table 5.7 presents the descriptive statistics relating to the regression variables used in addressing the first two objectives of this study. These variables are deflated using the outstanding shares and firm's beginning price of equity in the price and the return models respectively and are reported in the Nigerian Naira (₦). Panels A and B of Table 5.7 report the descriptive statistics of the full sample, partitioned into financial and nonfinancial firms. The mean (median) SP is ₦37.78 (₦12.00) and ₦16.15 (₦3.97) for financial and nonfinancial firms; both suggest that the sample firms, on average, experienced positive share price during the sample period. The minimum and maximum values demonstrate that nonfinancial firms have higher Naira share values based on ₦0.50 and ₦99.5 compared to ₦0.50 and ₦20 for their financial counterparts.

As expected, the mean value of the reported book value of equity of the test sample was positive with a slight difference. The average (median) of the variable was approximately ₦46.86 (₦12.59) billion for financial firms, which is slightly lower than ₦49.50 (₦33.75) billion for nonfinancial firms. This difference is likely because customer's deposit and other bank deposits are treated as liabilities and insurance companies are relatively small in size as compared to the banks. The net income also exhibits a positive mean (median) of ₦10.15 (₦2.26) billion for financial firms, which is much lower than ₦77.14 (₦18.52)

Table 5.7

Descriptive Statistics Related to the Regression Variables Deflated by Outstanding Shares, 2010-2014

Variables	1 SP_{it}	2 BVE_S_{it}	3 NI_S_{it}	4 CI_S_{it}	5 OCI_S_{it}	6 REV_Sit	7 SEC_Sit	8 PEN_Sit	9 LNI_{it}	10 LCI_{it}	11 $LOCI_{it}$
Panel A: Financial firms (n=123)											
Mean	0.3778	0.4686	0.1015	0.1799	0.0052	0.0051	0.0041	0.0005	0.0154	0.0156	0.2764
Median	0.1200	0.1259	0.0226	0.0413	0.0046	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000
SD	0.5068	0.6904	0.5241	0.5662	0.0431	0.0127	0.0326	0.0120	1.0125	1.0124	0.4491
Min	0.50	0.0243	-1.0456	-0.6821	-0.291	-0.0110	-0.1784	-0.0790	0.0000	0.0000	0.0000
Max	20.24	2.4356	1.8686	4.0161	0.0872	0.0750	0.1205	0.0870	1.0000	1.0000	1.0000
Panel B Nonfinancial firms(n=226)											
Mean	16.1511	0.4950	0.7714	0.9638	0.0290	0.0098	0.0053	0.0051	0.1726	0.1593	0.0032
Median	0.3970	0.3375	0.1853	0.2358	0.0068	0.0000	0.0000	0.0000	0.000	0.0000	0.0000
SD	25.6568	0.5886	1.5099	1.7164	0.0699	0.0429	0.0358	0.1170	0.3787	0.3668	0.9988
Min	0.50	0.0130	-0.6290	-0.6586	-0.1332	-0.1916	-0.2969	-0.5679	0.0000	0.0000	0.0000
Max	99.5	3.2100	5.6859	6.1431	0.3475	0.3640	0.1910	0.5686	1.0000	1.0000	1.0000

*Notes: P*anel A: SP_{it} =four-months share price after the financial year-end; $BVE\text{-}S_{it}$ = per share book value of common equity; NI_S_{it}= net income per share*;* CI_S_{it} = comprehensive income per share; OCI_S_{it} = other comprehensive income per share; REV_Sit = changes in revaluation surplus per share; SEC_Sit = changes in gains and losses on re-measuring available-for-sale financial assets per share; PEN_Sit = actuarial gains and losses on defined benefit plans per share; LNI_{it}, LCI_{it} and $LOCI_{it}$ are indicator variables assigned the value of 1 if negative earnings and 0 if otherwise and *i* and *t* refer to firm and year.

for nonfinancial firms. The magnitude of comprehensive income yielded an average (median) value of ₦17.98 (₦4.13) billion and ₦96.38 (₦23.58) billion for the two sample tests. Again, the comprehensive measure of income for nonfinancial firms was far greater as compared to financial firms. The average (median) values for other comprehensive income was also different given the value of ₦0.52 (₦0.46) billion and ₦2.08 (₦0.68) billion between the samples. The minimum values of the above income measures presented in Table 5.7 indicate the presence of firms with negative earnings, which suggests a corrective measure that lead to the introduction of a dummy variable "LOSS" to allow negative firms-year observations to have both different intercepts and slopes.

Fair value gain and losses on revaluation of non-current assets, on average, were ₦0.51 and ₦0.98 billion, suggesting a revaluation surplus for both sub-sample firms. While the mean on the fair value gains on re-measuring available-for-sale financial assets was positive at ₦0.52 billion for nonfinancial firms, financial firms on average, reported fair value gains of ₦0.41 billion during the sample period. In both cases, actuarial gains and losses were positive and nonfinancial firms having average actuarial gains of ₦0.51 billion, which is similar to ₦0.50 recorded for financial firms.

Figure 5.4A graphically presents the above pooled mean distributions for per share variables. As documented in Kanagarethnam et al. (2009), the median values of the components of other comprehensive income were zero, suggesting the low frequency and zero occurrence in some periods.

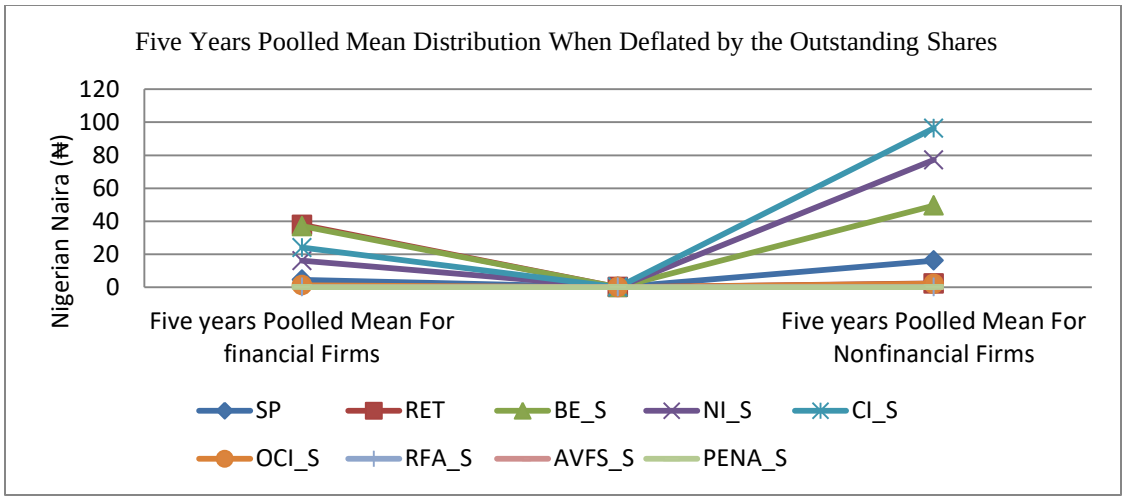


Figure 5.4A
Five Years Pooled Mean Distribution When Deflated by the Outstanding Shares

Table 5.8 presents the descriptive statistics of the variables used in the return model. The mean stock returns for the sample of financial and nonfinancial firms were around ₦4.53 (₦1.26) and ₦2.27 (₦1.55) for the period of 2010–2014. The net income scaled by the beginning price yields a mean (median) of approximately ₦11 (-₦31.00) billion and ₦41.63 (₦9.60) billion for the two cases. Comprehensive income has a mean (median) value of ₦56.78 (₦5.75) and ₦48.94 (₦10.85) billion for the two sample tests. Even though the mean value of comprehensive income deviates slightly from the statistical values obtained from the net income, the statistics indicated that the firms on average had a positive comprehensive income. The average (median) values of the other comprehensive income deflated by the beginning price are -₦13.03 (-₦2.86) and ₦21.50 (₦3.80) billion for the two samples. On average, the sample firms reported fair value gains on the non-current assets of approximately ₦0.65 and ₦0.36 billion.

Table 5.8

Descriptive Statistics Related to the Regression Variables Deflated by Beginning Price of Equity for 2010-2014

Columns	1	2	4	3	4	5	6	7	8	9
Variables	RET_{it}	NI_MC_{it}	CI_MC_{it}	OCI_MC_{it}	REV_MCit	SEC_MCit	PEN_MCit	LNI_{it}	LCI_{it}	$LOCI_{it}$
Panel A: Financial firms (n=123)										
Mean	4.5270	11.0000	56.8000	-13.3000	0.0065	0.0065	0.0007	0.1537	0.0156	0.2764
Median	1.2600	-3.1400	5.7500	-2.8600	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000
SD	0.6574	1.0143	0.1725	0.2708	0.0179	0.0341	0.0077	1.0125	1.0124	0.4491
Min	0.5000	-1.0585	-0.5651	-0.5835	-0.0067	-0.1330	-0.0205	0.0000	0.0000	0.0000
Max	3.0000	3.0320	0.5949	0.7094	0.1270	0.1746	0.0740	1.0000	1.0000	1.0000
Panel B: Nonfinancial firms (n=226)										
Mean	2.2657	41.6300	48.9400	21.5000	0.0036	0.0030	0.0049	0.1726	0.1593	-0.0032
Median	1.5500	9.61000	10.8500	3.8000	0.0000	0.0000	0.0000	0.000	0.0000	0.0000
SD	2.1569	1.6753	1.1378	0.0551	0.0151	0.0154	0.0534	0.3787	0.3668	0.9988
Min	-0.6450	-7.0205	-0.7271	-0.0601	-0.0690	-0.0650	-0.2525	0.0000	0.0000	0.0000
Max	7.3000	12.6350	4.2054	0.2296	0.0801	0.0973	0.3108	1.0000	1.0000	1.0000

Notes: RET_{it} = stock returns (inclusive of dividends) for the year ended four months after the fiscal yearend; NI_MC_{it} = net income deflated by the beginning price of common equity; CI_MC_{it} = comprehensive income deflated by the beginning price of common equity; OCI_MC_{it} = other comprehensive income deflated by the beginning price of common equity; REV_MC_{it}= changes in revaluation surplus deflated by the beginning price of common equity; SEC_MCit = changes in gains and losses on re-measuring available-for-sale financial assets deflated by the beginning price of common equity; PEN_MC_{it} = actuarial gains and losses on defined benefit plans deflated by the beginning price of common equity, LNI_{it}; LCI_{it} and $LOCI_{it}$ are indicator variables assigned the value of 1 if negative earnings and 0 if otherwise and *i* and *t* refer to firm and year.

Adjustment on the available-for-sale financial assets resulted in gains of ₦0.65 and ₦0.30 billion. In both cases, the adjustments to pension liability yield actuarial gains ₦0.07 and ₦0.49 billion. Figure 5.4B graphically demonstrated five-year pooled mean of the variables when deflated by the beginning price of common equity.

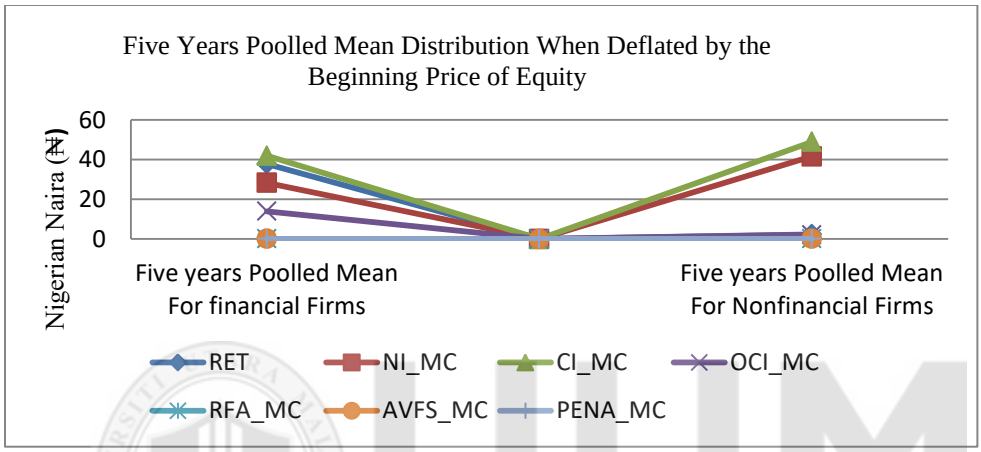


Figure 5.4B
Five Years Pooled Mean Distribution When Deflated by the Beginning Price of Equity

Conclusively, the above analysis suggests that industry classification and scaling are two major sources of differences in the data set used in this study. However, based on the means, the deviations are large for both sample classification and for the scaling choices.

5.4 Univariate Comparison for Accounting Regimes

This section presents the univariate analyses of the variables used in the regression analyses. Specifically, this section analyses the differences in the book value of equity and all the earnings components partition based on when reporting comprehensive income was voluntary and mandatory. To maintain a comparable sample and to ensure that the comparison is not driven by the numbers of years in the voluntary and mandatory

regimes, the adoption year (2012) was omitted, which reduced the data set to two years before (voluntary) and after (mandatory) the adoption of IFRS. This is consistent with Hung and Subramanyam (2007) and Clarkson et al. (2011) who advocated for usage of the same number of firm-years in pre-and post-analysis. For the purposes of comparing the two accounting frameworks, the sample was partitioned into 2010 and 2011 representing the voluntary regime and 2013 and 2014 representing the mandatory period. The omission of 2012 and test of difference of the mean values makes the data represented in Table 5.9 differ from those in Table 5.7 and Table 5.8.

Panel A and B of Table 5.9 provide a breakdown based on the voluntary and mandatory regimes using sample of financial firms. From 123 observations representing financial firms, 33 observations were in the voluntary regime and 90 were in the mandatory regimes, of which 63 firm-year observations related to 2013 and 2014. In Panel A and B, the mean (median) SP in the two periods were ₦40.26 (₦14.75) and ₦39.78 (₦12.10). RET had a mean (median) of ₦3.97 (₦1.18) and ₦4.71 (₦1.42) with the figures being higher in the post adoption period. The mean (median) SP was not statistically different between voluntary and mandatory accounting regimes based on the p-values of 0.967 (0.521). The mean (median) RET were also not significant based on values of 0.732 (0.861).

On average, the mean (median) NI_S was ₦15.00 (₦0.41) and ₦13.03 (₦0.18); CI_S ₦29.55 (₦12.33) and ₦24.55 (₦0.96); OCI_S ₦0.17 (₦0.30) and ₦0.12 (₦0.26) mutually exhibited a decreasing trend. The test of the mean (median) differences between

the test periods were not statistically significant for NI_S, CI_S and OCI_S given values of 0.805 (0.225), 0.710 (0.753) and 0.518 (0.628) respectively. The components of other comprehensive income also exhibited a decreasing trend, based on the voluntary and mandatory regimes means of REV_S ₦0.16 (₦0.10) and PEN_S ₦0.15 (-₦0.32) in billions of Naira. Even though the mean values were higher in the pre-adoption period, the test of difference in the means for the two accounting framework was not statistically significant for REV_S and PEN_S, which had p-values of 0.758 and 0.683 respectively.

Similarly, the mean (median) NI_MC ₦27.36 (₦15.18) and ₦29.46 (₦19.24); CI_MC ₦52.90 (₦10.71) and ₦46.93 (₦9.40); OCI_MC ₦3.82 (₦0.84) and ₦2.55 (₦0.39) exhibited decreasing trends except that other comprehensive income loss was less in the mandatory period. When the variables were deflated by the outstanding shares, the p-values of 0.866 (0.777), 0.811 (0.768) and 0.647 (0.419) for NI_MC, CI_MC and OCI_MC suggest that the mandatory requirement of a comprehensive income statement does not translate to more informativeness of earnings. The components of other comprehensive income also demonstrated a lesser mean value in the post adoption period. For instance, the means during the pre- and post were REV_MC ₦0.68 (₦0.18), SEC_MC ₦12.88 (₦13.47) and PEN_MC was ₦16.57 (₦0.51) and all better during the voluntary disclosure of comprehensive income, although not statistically significant based on the p-value of 0.340, 0.958 and 0.178 respectively.

Table 5.9

Test of Difference of Earnings Components for the Voluntary (2010-2011) and Mandatary (2013-2014) Reporting Periods

	SP	NI_S	CI_S	OCI_S	REV_S	AVSF_S	PEN_S	RET	NI_MC	CI_MC	OCI_MC	REV_MC	AVSF_MC	PENA_ MC
Financial Firms														
Panel A: Voluntary 2010 to 2011 (n=33)														
Mean	0.4026	0.1500	0.2955	0.1734	0.0167	0.0033	0.0149	3.9700	0.2737	0.5290	0.0382	0.0862	0.1287	0.1657
Median	0.1475	0.0415	0.1233	0.1233	0.0000	0.0000	0.0000	0.0118	0.1518	0.1071	0.0083	0.0000	0.0000	0.0000
Std Dev	0.5125	0.3289	0.7128	0.2597	0.4096	0.0237	0.1387	0.0501	0.4599	1.3271	0.1418	0.3612	0.5052	0.5252
Panel B: Mandatory 2013 to 2014 (n= 63)														
Mean	0.3978	0.1303	0.2455	0.1243	0.0101	0.0862	-0.003	4.7100	0.2946	0.4693	0.0252	0.0185	0.1347	0.0507
Median	0.1210	0.0184	0.0968	0.2628	0.0000	0.0000	0.0000	0.0142	0.1925	0.0945	0.0039	0.0000	0.0000	0.0000
Std Dev	0.5357	0.3864	0.5536	0.2874	0.0492	0.0237	0.1353	0.0718	0.4600	1.0207	0.1172	0.1306	0.5040	0.2883
Diff in Means (p-value)	0.0409	0.248	0.373	0.8094	0.6496	-1.219	0.614	-0.518	-0.169	0.240	0.459	0.959	-0.053	1.258
	(0.967)	(0.805)	(0.710)	(0.518)	(0.420)	(0.226)	(0.541)	(0.606)	(0.866)	(0.812)	(0.647)	(0.340)	(0.958)	(0.178)
Diff in Medians (p-value)	0.642	1.213	-0.316	0.484	1.419	0.151	0.729	-0.081	0.283	-0.295	0.808	1.671	0.981	0.836
	(0.521)	(0.225)	(0.752)	(0.626)	(0.156)	(0.880)	(0.466)	(0.936)	(0.777)	(0.768)	(0.419)	(0.095)	(0.326)	(0.403)
Nonfinancial Firms														
Panel C: Voluntary 2010 to 2011 (n=52)														
Mean	9.6000	0.8270	0.9557	-0.049	0.0149	0.0358	0.0596	1.9719	0.0175	0.3366	0.0795	0.0268	0.1226	0.0538
Median	0.1970	0.2040	0.2792	-0.006	0.0000	0.0000	0.0000	1.3000	0.0942	0.1182	0.0053	0.0000	0.0000	0.0000
Std Dev	1.7198	1.5468	1.4894	0.1704	0.0522	0.1706	0.2506	1.9632	1.2792	0.9426	0.3130	0.1551	0.4534	0.3154
Panel D: Mandatory 2013 to 2014 (n=112)														
Mean	1.7600	0.7587	0.9657	-0.102	0.0412	0.0581	0.0202	2.3330	0.5074	0.5243	0.0723	0.0526	0.0908	0.0372
Median	0.4500	0.1743	0.2178	-0.013	0.0000	0.0000	0.0000	1.7500	0.1064	0.1064	0.0037	0.0000	0.0000	0.0000
Std Dev	2.7038	1.5053	1.7678	0.3790	0.2149	0.3164	0.2082	2.1982	1.1734	1.1774	0.3347	0.3026	0.3872	0.2395
Diff in Means (p-value)	-1.760	0.454	0.264	0.393	0.847	1.370	0.324	-0.869	-1.846	-0.791	2.219	-0.101	0.472	0.184
	(0.080)	(0.651)	(0.792)	(0.695)	(0.398)	(0.173)	(0.746)	(0.807)	(0.067)	(0.430)	(0.028)	(0.920)	(0.638)	(0.854)
Diff in Medians(p-value)	-1.930	0.475	1.121	0.115	0.389	0.523	0.113	-0168	-0188	0.188	1.467	0.297	-103	0.614
	(0.053)	(0.635)	(0.262)	(0.906)	(0.697)	(0.601)	(0.910)	(0.867)	(0.867)	(0.851)	(0.142)	(0.766)	(0.918)	(0.539)

Notes: Table 5.9 presents the mean (median) test of difference of earnings components for the voluntary and mandatory reporting regimes using *t*- test (differences in means) at two tailed and Wilcoxon rank-sum (differences in medians). The sample size comprised of 31 and 41 firm-year observations in the voluntary period; and 60 and 122 in the mandatory period for the two cases.

In the case of nonfinancial firms, 112 of the 226 firm-year observations were in the mandatory period and 52 observations were in the voluntary regime. Table 5.9 Panel C and D show average (median) SP of ₦9.60 (₦1.97) and ₦17. 29 (₦4.50) and p-value for test of difference was 0.080 (0.053). RET had a displayed mean (median) of ₦1.97 (₦1.30) and ₦2.27 (₦1.75) with p-values of 0.386 (0.568). Though the market values of equities were higher in the post-adoption period, but only share price showed a statistically significant difference between the periods. Most of the components of earnings scaled by the outstanding shares were lower in the mandatory regime. For instance, the mean (median) NI_S before and after comprehensive income type-statement were ₦82.70 (₦20.40) and ₦75.87 (₦17.40) billions with a p-value of 0.651 (0.635). The CI_S also exhibited mean (median) values of ₦95.56 (₦27.92) and ₦96.56 (₦21.77) having p-values of 0.792 (0.262). The OCI_S for the periods had negative mean (median) of -₦0.49 (-₦0.06) and -₦10.16 (₦0.13), but was not statistically significant based on the p-value of 0.695 (0.908). The negative values indicated the presence of fair value losses as presented in Khan and Bury (2014).

Moreover, when earnings were deflated by the beginning price of equity, the mean (median) NI_MC were ₦17.05 (₦9.40) and ₦50. 70 (₦9.60) billions with a p-value of 0.067 (0.867). CI_MC was ₦33.70 (₦11.80) and ₦52.40 (₦10.6) billions and p-values of 0.430 (0.851). OCI_MC is ₦3.20 (₦0.40) and ₦1.80 (₦0.40) with p-values of 0.028 (0.142). The mean and median fair value gains and losses on the non-current assets, available-for-sale financial assets and actuarial gains and losses for the two deflators were almost zero. This shows that over the two accounting frameworks, the frequency of OCI

components were low as Kanagaretnam et al (2009) and Khan and Bury (2014) documented. Although the values appear better in the pre-adoption period, they were not statistically significant to make a conclusion on the superiority of one accounting framework over the other, except for SP, NI_MC and OCI_MC. Overall, the analysis presented in Table 5.9, on average, does not indicate the superiority of the earnings component in the mandatory regime over the voluntary regime and vice versa.

5.5 Multivariate Analysis: Value Relevance of Earnings Components

To provide inferential inference for the variables discussed in Section 5.3, Equations 6a to 7b were tested for the relative value relevance of the net income and comprehensive income. Further, Equations 9 to 12 were also tested to examine the incremental value relevance of net income, other comprehensive income and its components.

5.5.1 Correlation Matrix for Variables Used in Price and Return Regressions

Table 5.10 presents a summary correlation matrix for the variables used in the price and the return model regressions in testing the relative value relevance of net income and comprehensive income. In Table 5.10, Panel A and B, the coefficients of the book value of equity, net income and comprehensive income for the two samples are positive and significantly correlated with SP. Similarly, the two financial performance measures correlated with RET. The positive correlation between these accounting measures and market value of equities is expected because both are measures of firm value. The differences in the calculations of SP and RET make these correlations striking. An inspection of the correlation between the predictor variables indicates that the strength of

Table 5.10

Correlation Matrix and Pearson Correlation Coefficients for Relative Value Relevance Variables Used in the Price Model

	SP	BVE_S	NI_S	CI_S	LNI	LCI
Panel A: Financial Firms (n=123)						
SP	1					
BVE_S	0.4208*	1				
NI_S	0.2235*	0.0782	1			
CI_S	0.1653*	-0.0006	0.5315*	1		
LNI	-0.1406	-01364	0.0382	-0.0389	1	
LCI	-0.0616	-0.1038	-0.0135	-0.0906	0.8688*	1
Panel B: Nonfinancial Firms (n=226)						
SP	1					
BVE_S	0.3686*	1				
NI_S	0.3539*	0.1425*	1			
CI_S	0.2712*	0.0834	0.8703*	1		
LNI	- 0.1225*	-0.1113*	-0.1150*	-0.0819	1	
LCI	-0.1069	-0.1913*	-0.0471	-0.0201	0.8130*	1

Variables Used in the Return Model (89)

	RET	NI_MC	CI_MC	LNI	LCI
Panel C: Financial Firm					
RET	1				
NI_MC	0.2895*	1			
CI_MC	-0.1025	0.1423	1		
LNI	-0.1286	-0.4095*	0.0977	1	
LCI	-0.0444	-0.4000*	0.0187	0.8688*	1
Panel D: Nonfinancial Firm (n=152)					
RET	1				
NI_MC	0.3696*	1			
CI_MC	0.3416*	0.4709*	1		
LNI	-0.1572*	-0.2617*	-0.0694	1	
LCI	-0.2342*	-0.1764*	-0.1646*	0.8130*	1

Notes: SP_{pit} = price per share four-month after the financial year-end; BVE_S_{it} = per share book value of common equity; NI_S_{it} = net income per share; CI_S_{it} = comprehensive income per share.
RET_{it} = stock returns for the year ended 4 months after the fiscal yearend; NI_MC_{it}: = net income deflated by the beginning price; CI_MC_{it} = comprehensive income deflated by the beginning price. Additional suffix "Δ" denotes a change between periods *t*-1 and t for each variable respectively; LNI_{it} and LCI_{it} are indicator variables which equals one if negative earnings and 0 if otherwise and *i* and *t* refer to firm and year.

the relationship between the predictor variables was reasonably within the acceptable threshold of not more than 0.9. The largest values are between LCI and LNI (0.8688) and CI_S and NI_S (0.8703). Being indicator variables (LCI and LNI) were measured as one

if earnings were negative and zero if otherwise, such correlation coefficients are expected to be very high. Similarly, the two major financial performance indicators also exhibited a very high correlation as documented in Kubota et al. (2011) and Mechelli and Cimini (2014).

Interestingly, both cases do not signal a multicollinearity because the variables are used in different models. In particular, the correlation between the variables in the core models (net income and comprehensive income) are modest. According to Pallant (2007), a simple correlation between variables does not pose a multicollinearity problem until the value exceeds 0.90. Therefore, the results of the correlation matrix presented in Table 5.10 do not indicate serious evidence of multicollinearity problem that could bias the statistical conclusion of the estimated regressions. Next subsections report the results of test of model specification for estimations used to examine relative and incremental value relevance tests.

5.5.2 Regression Analysis on the Relative Value Relevance of Net Income and Comprehensive Income

This section tests one major implication of valuation theory, which postulates that traditional net income is more value relevant than comprehensive income in the Nigerian capital market using Equations 6a to 7b. In testing all hypotheses in this section, a modified Ohlson (1995) model that constructs book value of equity and earnings as a function of price was used. To avoid bias inference as recommended by Kothari (2001) and implemented in the previous value relevance studies, a modified return model of Easton and Harris (1991) was used as an alternative test for relative value relevance tests.

For the purpose of interpretations, statistics such as coefficient (β), robust standard error, t-statistics and the p-values are extracted and presented. To compare the relative value relevance between the net income and the comprehensive income, three benchmarks were employed consistent with previous studies.

First, is the assessment of the magnitude of R^2 between the two competing models. Based on this methodology, the value relevance difference between the net income and the comprehensive income is interpreted that the net income model is more value relevant than the comprehensive, if the R^2 of the net income is higher than that of the comprehensive income and vice versa (Dhaliwal et al. 1999; Goncharov & Hodgson, 2011; Mechelli & Cimini, 2014). In the second benchmark, the regression coefficients of the variables are compared. As the case with R^2, a conclusion was made that net income is more value relevant if it has a regression coefficient higher than that of comprehensive income and the result is interpreted in reverse order if the regression coefficient of comprehensive income is larger as Goncharov and Hodgson (2011), Kubota et al. (2011); Mechelli and Cimini (2014) implemented. In the third methodology, the Vuong's (1989) Z-statistic test of difference of R^2 values was employed to establish if they are statistically significant in line with Goncharov and Hodgson (2011) and Mechelli and Cimini (2014). As a confirmatory check of Vuong's (1989) Z-statistic test, Akaike's Information Criterion (AIC) is also employed to further ascertain the competing importance between net income and comprehensive income based on the lower values of AIC.

5.5.2.1 Model Specification Test for Relative Value Relevance Estimations

In regression analysis, model specification test is critical to avoid misleading inferences that may arise from inappropriate model specification. Table 5.11 presents the results of the link test, which is a general model specification for regression models. The link test is based on the assumption that if a regression is properly specified, then the inclusion of additional explanatory variable, except by chance should not be significant. The _hat values that are the predicted values of the models are significant as expected. Likewise, _hatsq are mostly insignificant suggesting that the models are correctly specified. Thus, specifying SP as a function of the book value of equity, net income and comprehensive income; and RET as a function of level and change earnings results in a more parsimonious estimation. Pooled ordinary least square regression results between the dependent variables (SP and RET) and the independent variables are then presented.

Table 5.11
Model Specification for Relative Value Relevance Estimations

Sample Firms		Financial Firms		Nonfinancial Firms	
Models		_hat	_hatsq	_hat	_hatsq
Model 6a	P-value	0.088*	0.715	0.051**	0.260
Model 6b	P-value	0.000***	0.753	0.020**	0.200
Model 7a	P-value	0.038**	0.488	0.517	0.227
Model 7b	P-value	0.013**	0.196	0.287	0.312

5.5.2.2 Findings and Discussions on the Relative Value Relevance of Net Income and Comprehensive Income

Table 5.12 presents the results of price–earnings model for testing H_{1a} for financial and nonfinancial firms. The regression coefficients on the book value of equity of the

financial firms were positive 0.74 (t = 3.56, p < 0.001) and 0.82 (t = 4.23, p < 0.000) and significantly better at 1 percent in the two competing models[1]. On the other hand, the coefficients of BVE_S for nonfinancial firms were positive 0.69 (t =3.48, p < 0.001) and 0.74 (t = 3.75, p < 0.000) and significant at 1 percent in the two competing models. These statistics show that the financial firms have higher book value of equity than nonfinancial firms, reflecting their typical asset structure. Panel A presents the result of the relative value relevance of net income for financial and nonfinancial firms. As predicted, the regression coefficients were positive for both sub-sample firms based on the values of 0.37 (t = 2.45, p < 0.001) and 0.52 (t = 3.55, p < 0.000) and significant at 1 percent. Similarly, the relative value relevance of comprehensive income presented in Panel B had positive coefficients of 0.27 (t = 2.46, p < 0.015) and 0.38 (t = 2.86, p < 0.005) and significant at 5 and 1 percent levels respectively for financial and nonfinancial firms.

Even though the value relevance of book value of equity was not the focus of this study, it is important to highlight that the coefficient of book value of equity was continuously greater than those of net income and comprehensive income for both financial and nonfinancial firms[2]. These higher coefficients for the two samples suggest investors' heavily rely on the information content of the book value of equity, especially in the case of financial firms due to their typical assets base. In other words, this result indicates that balance sheet information was more value relevant in the Nigerian market. A possible explanation could be that, decreasing of creative accounting practices via balance sheet amounts, the focus of the IFRS on the use of fair values and more timely recognition of

[1] Two competing models in this study are net income and comprehensive income estimations
[2] This is likely when the true state of the financial health of companies is uncertain (Barth et al., 1998).

Table 5.12

Relative Value Relevance of Net Income and Comprehensive Income Using the Price Model

		Financial Firms					Nonfinancial firms				
Variables	Sign	Coef.	Robust Std Error	t	P-Value	VIF	Coef.	Robust Std Error	t	P-Value	VIF
Panel A:NI Models											
CONS	+/-	0.1121	0.0437	2.56	0.012**		0.5349	0.1849	2.89	0.004***	
BVE_S_{it}	+	0.7374	0.2085	3.56	0.001***	1.11	0.6862	0.1972	3.48	0.001***	1.04
NI_S_{it}	+	0.3730	0.1524	2.45	0.016**	1.07	0.5183	0.1461	3.55	0.000***	1.03
LNI_{it}	-	-0.0279	0.0259	-1.07	0.285	1.03	-0.1434	0.1108	-1.29	0.197	1.03.
$LNI*NI\_S_{it}$	-	-0.0543	0.0684	-0.79	0.429	1.01	-0.1510	0.1004	-1.50	0.134	1.01
No. of observations		123					226				
F-value/ Mean VIF				8.29	0.000***	1.06			11.14	0.002***	1.03
Adjusted R2		32.63%					23.50%				
Akaike's Information Criterion		AIC 1.157	BIC -435.55				AIC 4.494	BIC -192.24			
Panel B CI Models											
CONS	+/-	0.0851	0.0454	1.88	0.063*		0.5334	0.1959	2.72	0.007***	
BVE_S_{it}	+	0.8215	0.1940	4.23	0.000***	1.03	0.7412	0.1976	3.75	0.000***	1.05
CI_S_{it}	+	0.2676	0.1087	2.46	0.015**	1.03	0.3670	0.1285	2.86	0.005***	1.04
LCI_{it}	-	-0.004	0.0375	-0.12	0.904	1.03	-0.0916	0.1079	-0.85	0.397	1.01
$LCI*CI\_S_{it}$	-	-0.0658	0.0810	-0.81	0.418	1.03	-0.1101	0.0829	-1.33	0.186	1.01
No. of observations		123					226				
F-value/Mean VIF				6.22	0.001***	1.03			8.32	0.000***	1.03
Adjusted R2		31.28%					19.79%				
Akaike's Information Criterion		AIC 1.177	BIC -433.09				AIC 4.542	BIC -181.54			
Vuong Z-statistics		0.2108			0.8330		2.1012			0.0356**	

otes: Table 5.12 presents the result of the relative value relevance between the net income and comprehensive income. BVE_S_{it} = per share book value of common equity; NI_S_{it} = net income per share; CI_S_{it} = comprehensive income per share; LNI_{it} and LCI_{it} are indicator variables which equal 1 if negative earnings and 0 if otherwise. $LNI*NI\_S_{it}$ and $LCI*NI\_S_{it}$ are $_{interaction}$ terms for loss firms and *i* and *t* refer to firm and year. *, **, *** denote significance at the 10%, 5%, and 1% levels respectively.

assets and liabilities leads to a greater ability of the book value of equity in explaining share prices. This evidence seems to support the arguments in Barth et al. (1998) and Tsalavoutas et al. (2012) who documented the heavy reliance of investors'on the book value of equity for valuation purposes due to uncertaintity of earnings.

The result of the alternative approach (return-earnings) in testing the implication of valuation theory is presented in Table 5.13. Using financial firms, the regression coefficient of net income and comprehensive income scaled by the beginning price were significantly positive with coefficients of 0.60 ($t = 4.77$, $p < 0.000$) and 0.20 ($t = 3.12$, $p < 0.002$) and both are significant at 1 percent. More so, both net income and comprehensive income were positive and statistically significant based on the value of 0.63 ($t = 4.86$, $p < 0.000$) and 0.58 ($t = 4.23$, $p < 0.002$) using the sample of nonfinancial firms. The results relating to change in net income (ΔNI_MC) and change in comprehensive income (ΔCI_MC) were positive, but not significant. This suggests that changes in earning were not positively priced in the Nigerian market.

The results of the indicator variables, LNI and LCI per share in Table 5.12 and per beginning price in Table 5.13 were negative as expected. Their interaction with net income and comprehensive income to control for negative earnings were mostly negative, but not significant for nonfinancial and financial firms. The negative sign and insignificance of the interaction terms are as documented in Barth et al. (2012) and Mechelli and Cimini (2014). Nevertheless, their inclusion in the analysis provides some

Table 5.13

Relative Value Relevance of Net Income and Total Comprehensive Income Using the Return Model

		Financial Firms					Non-financial Firms				
Variables	Sign	Coef.	Robust Std Error	t	P Value	VIF	Coef.	Robust Std Error	t	P Value	VIF
Panel A:NI Models											
CONS	?	0.3002	0.0887	3.38	0.001***		1.9379	0.1820	10.65	0.000***	
NI_MC_{it}	+	0.6054	0.1269	4.77	0.000***	1.14	0.6290	0.1293	4.86	0.000***	1.08
ΔNI_MC_{it}	+	0.0717	0.6013	0.12	0.905	1.11	0.5742	0.7604	0.76	0.451	1.01
LNI_{it}	-	-0.0855	0.1321	-0.65	0.519	3.45	-0.1550	0.1552	-1.10	0.320	1.07
$LNI*NI\_MC_{it}$	-	-0.1029	0.1708	-1.60	0.548	3.48	-0.0743	0.4492	-1.67	0.097	1.02
No. of observations		89					152				
F-value/ Mean VIF				5.05	0.001***	2.82			12.83	0.000***	1.04
Adjusted R2		23.90%					18.05%				
Akaike's Information Criterion		AIC 1.93	BIC -285.75				AIC 4.23	BIC -105.24			
Panel B CI Models											
CONS	?	0.5033	0.0978	5.14	0.000***		1.9753	0.1421	13.89	0.000***	
CI_MC_{it}	+	0.2046	0.0655	3.12	0.002***	1.05	0.5752	0.1360	4.23	0.000***	1.03
ΔCI_MC_{it}	+	0.0760	0.0876	0.87	0.388	1.14	0.5908	0.8889	0.66	0.507	1.01
LCI_{it}	-	-0.0497	0.1657	-0.30	0.765	3.68	-0.4166	0.1296	-3.21	0.002***	1.05
$LCI*CI\_MC_{it}$	-	0.0517	0.1805	0.29	0.776	3.37	-0.2186	0.1078	-2.03	0.044**	1.03
No. of observations		89					152				
F-value/Mean VIF				2.43	0.033**	2.06			10.48	0.000***	1.03
Adjusted R2		13.92%					15.76%				
Akaike's Information Criterion		AIC 2.18	BIC -188.42				AIC 4.25	BIC -246.45			
Vuong Z-statistics		0.9374			0.3485		1.2273			0.220	

Notes: NI_MC_{it}: net income deflated by the beginning price; CI_MC_{it} = comprehensive income deflated by the beginning price. Additional suffix "Δ" denotes a change between periods *t*-1 and t for each variable respectively; LNI_{it} and LCI_{it} are indicator variables that equals one if earnings is negative and 0 otherwise. $LNI*NI\_MC_{it}$ and $LCI*NI\_MC_{it}$ are interaction terms for loss firms and *i* and *t* refer to firm and year. *, **, *** denote significant at 10%, 5%, and 1% levels respectively.

value relevant information to investors as evidenced by the increase in the coefficient of determinations as compared to when they are not controlled for (untabulated).

Turning to benchmarks used to interpret the relative value relevance, the results presented in Table 5.12 for price-earnings relation showed that the coefficient of the net income (0.37) for financial firms was greater than that of comprehensive income (0.27). Likewise, for nonfinancial firms, the coefficient on the net income (0.52) was greater than 0.38 achieved for comprehensive income. Table 5.13 presents the coefficient of return-earnings estimation. Similar results were achieved as in the case of price-earnings relationship based on the coefficient of 0.60 on net income and 0.20 on comprehensive income for financial firms. For the sample of nonfinancial firms, net income exhibited coefficient of 0.63, which was greater than 0.58 for comprehensive income. Thus, if the first benchmark of the magnitude of regression coefficients is anything to go by, it is obvious that the net income is more value relevant that comprehensive income for the two sample classifications.

The second benchmark is the coefficient of determination (R^2). As presented in Table 5.12, the R^2 of net income models for financial and nonfinancial firms explained 32.63 and 23.50 percent variation in the share price. These R^2 were higher than 31.28 percent and 19.97 percent variation of share prices explained by the comprehensive income for financial and nonfinancial firms. Similarly, Table 5.13 showed a R^2 of 23.90 percent for net income model, which was greater than 13.92 percent documented for the comprehensive income model for financial firms. For nonfinancial firms, R^2 of 18.05

percent was documented for the net income model, again greater than 15.76 percent documented for the comprehensive income model. Again, the second benchmark for interpreting the relative value relevance suggests the dominance of net income over the comprehensive income for both financial and nonfinancial firms. It is important to note that the differences in R2's are relatively small. This is expected because comprehensive income is the net income adjusted for dirty surplus flows. Hence, the explanatory power of the two performance indicators should be close as Mechelli and Cimini (2014) observed in their study of European countries.

The third benchmark is the Vuong Z-statistic test of differences of R^2 between net income and comprehensive income models. The Vuong Z-statistic for financial and nonfinancial firms produced positive Z-statistics using price-earnings relation, but was only statistically significant at 5 percent (Vuong V-statistic 2.10)[1] for nonfinancial firms. Likewise, Vuong Z-statistic test of differences in R^2 between the competing models using the return-earnings relationship for the two sub-sample firms also produced positive Z-statistics, but were not statistically significant. However, a positive Vuong Z-statistic value indicates that the net income models are better specified than the comprehensive income in explaining share prices and stock returns. As a confirmatory check, Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC) were used to confirm if the documented positive, but not significant, Vuong Z-statistic suggests the dominance of net income over comprehensive income as Vuong (1989) posited.

[1] For the relative information content test, this study used a testing framework that compares the performance of the model as ranked by the magnitude of the adjusted R-squares and test a null hypothesis of "no difference" in information content by testing the significance of the difference in Vuong V-statistic.

Interestingly, the lower values of AIC and BIC continued to support the superiority of the net income over the comprehensive income. Thus, the null hypothesis of no difference in the information content of net income and the comprehensive income is rejected.

Seemingly, the three benchmarks of interpreting relative value relevance indicate the dominance of net income over the comprehensive income for financial and nonfinancial firms. As argued in Fairfield (1996), Dhaliwal et al. (1999), Jones and Smith (2011) and Mechelli and Cimini (2014), firms earnings are theoretically more value relevant when they are permanent, more persistent, have higher quality and are mainly from operations. The fact that net income falls into the permanent category and comprehensive income falls into the transitory category makes findings that comprehensive income is less strongly associated with the market value of equity not surprising.

Comprehensive income is usually computed after adjusting net income for fair value gains and losses such as gains and losses on non-current assets, fair value gains and losses on available-for-sale financial assets and actuarial gains and losses on defined benefit plans. Thus, adjustments to net income in order to account for dirty surplus flows adds greater volatility and decreases the persistence of comprehensive income, particularly under bearish economic situation. The unfavorable market situation of NSE market during the study period that can negatively affect fair value adjustments of peripheral earnings could leads to less value relevance of comprehensive income in explaining share prices and stock returns. Even though comprehensive income comprised several transitory items, certainly, it increase disclosure of several financial performance

indicators for different users' application. It is therefore possible that the two financial performance indicators are value relevant in the NSE market on an individual basis. The implication is that, when analysing firm value, investors in the NSE market should consider both net income and comprehensive income.

Overall, this study failed to reject H_{1a} that hypothesised that traditional net income is more value relevant than comprehensive income in the Nigerian capital market. This position supports the theoretical assumption that permanent earnings are more value relevant than the transitory earnings. Similar findings with regard to the dominance of net income over comprehensive income have been reported by Dhaliwal et al. (1999), Wang et al. (2006) for Dutch firms, Brimble and Hodgson (2008), Goncharov and Hodgson (2011), Mechelli and Cimini (2014) for European firms. While these studies documented that comprehensive income was a better measure of stock price and stock returns, they used share price or stock returns of different financial years-end based on contextual factors and regulatory requirements. The following subsection presents the findings and discussions on the value relevance difference of comprehensive income between mandatory and voluntary regimes.

5.5.2.3 Findings and Discussions on the Value Relevance Difference of Comprehensive Income Between Mandatory and Voluntary Regimes

Table 5.14 presents the results of differences between voluntary and mandatory comprehensive reporting regimes. For both financial and nonfinancial firms, comprehensive income was not positively priced in the voluntary regime. Under the

mandatory regime, comprehensive income was positive and significant at 1 percent and $R^{2'}$s were higher in the mandatory regime for both financial and nonfinancial firms. Cramer's Z-test of difference in the value relevance of comprehensive income suggests a significant value relevance difference of comprehensive income given accounting regimes. The Cramer's Z-statistic test of differences between accounting regimes was only significant for nonfinancial firms based on the value -3.55 ($p < 0.001$). This finding revealed that the introduction of IAS 1, which specifically focuses on the presentation of dirty surplus flows have increased the value relevance of comprehensive income for a sample of nonfinancial firms. Perhaps, this was due to the increased transparency and clarity of financial reporting disclosure advocated for mandatory comprehensive income reporting.

Therefore, H_{1b} which hypothesised that the value relevance of comprehensive income in the mandatory regimes was greater than in the voluntary regime in the Nigerian capital market was partially accepted. Similar evidence was presented by Marchinia and D'Este (2015) for Italian firms that the first-time adoption of comprehensive income reporting significantly affected Italian reporting firms due to the extensive use of the historical cost accounting model. In continental Europe, Fasan, Fiori and Venice (2014) revealed an increase in the value relevance of comprehensive income in post-IAS/IFRS in 2005 and IAS 1 Revised in 2009.

Table 5.14

Value Relevance Difference of Comprehensive Income Between Voluntary and Mandatory Regimes

Variable	Coef.	Std Error	t	VIF	Coef.	Std Error	t	VIF
Voluntary Regime- Fiancial Firms (n=33)					*Nonfinancial Firms (n=52)*			
CONS	0.16	0.27	1.93*	-	0.31	0.30	0.81	-
BVE_S_{it}	0.65	2.39	0.024***	1.39	0.56	0.51	1.10	1.16
CI_S_{it}	0.13	0.13	1.01	1.49	0.08	0.09	0.82	1.08
LCI_{it}	0.08	0.07	1.12	1.14	0.17	0.19	0.91	1.17
$LCI*CI\_S_{it}$	-0.11	0.17	-0.65	1.28	0.19	0.16	1.41	1.11
F-statistics			2.50**				0.63	
R^2			24.61%				15.91%	
Mean VIF				1.33				1.13
Mandatory Regime (n=63)					*(n=112)*			
CONS	-0.05	0.07	-0.74	-	0.76	0.27	2.81***	-
BVE_S_{it}	1.32	0.29	4.57***	1.08	0.64	0.22	2.94***	1.06
CI_S_{it}	0.48	0.11	4.29***	1.03	0.40	0.18	2.18**	1.04
LCI_{it}	0.08	0.07	1.12	1.07	-0.19	0.15	-1.31	1.07
$LCI*CI\_S_{it}$	-0.11	0.10	-1.07	1.04	-0.18	0.09	-1.92*	1.07
F-statistics			10.93***				6.50***	
R^2			49.03%				18.96%	
Mean VIF				1.05				1.06
Cramer's Z-test (H0: Model 6b mandatory> Model 6b voluntary)								
Cramer's Z-scores			-0.49 (p < 0.312)				-3.55 (p < 0.001)	

Notes: Table 5.14 presents the result of the differences between voluntary and mandatory comprehensive reporting. BVE_S_{it} = per share book value of common equity; CI_S_{it} = comprehensive income per share; LCI_{it} are indicator variables which equal 1 if negative earnings and 0 if otherwise. $LCI*CI\_S_{it}$ is an interaction term for loss firms and *i* and *t* refer to firm and year. *, **, and ***denote significance at the 10%, 5%, and 1% levels respectively.

For financial firms, the absence of relative value relevance difference of comprehensive income between the regimes could be due to the fact that financial institutions are recognised for providing greater accounting disclosure. For instance, partial reporting based on the IFRS standards began in the banking system in 2010 in a bid to integrate the global best practices in financial reporting and disclosure. This initiative, according to the Central Bank of Nigeria, was to enhance market discipline and reduce uncertainties.

Thus, mandatory comprehensive income in 2012 would not necessarily make any difference. Studies focusing on the issue of pre and post comprehensive income reporting is scant except for location literature (Cahan et al., 2000; Mechelli & Cimini, 2014). These studies provided evidence of no increase in the value relevance of comprehensive income upon issuance of a statement of comprehensive income in New Zealand and European continent. This conclusion was reached due to the fact that the mandatory presentation of comprehensive income does provide additional information than what was already available in the financial statement.

Table 5.15 presents a summary comparison of the predicted and actual results for H_{1a} and H_{1b}. The result revealed that net income dominates the comprehensive income for both financial and nonfinancial firms using the price model and the return model in the Nigerian capital market. While these findings are supportive of the valuation implication, the findings are strengthened by three benchmarks used to gauging relative value relevance inference and several sensitivity analyses discussed in Section 6.7. Thus, this study failed to reject H_{1a}, which hypothesised that traditional net income is more value relevant than comprehensive income in the Nigerian capital market. H_{1b} was partially supported because Cramer's z-test of difference was only significant for the sample nonfinancial firms. This result suggested that mandatory reporting of comprehensive income was of relevance for Nigerian nonfinancial firms.

Table 5.15

The Summary of Predicted and Actual Results for H_{1a} and H_{1b}

Hypothesis	Proxy	Predicted	Actual Financial	Actual Nonfinancial	Support for Hypothesis
Valuation Theory	BVS_S	+ve	**+ve**	**+ve**	**Supported**
	NI_S	+ve	**+ve**	**+ve**	**Supported**
	CI_S	+ve	**+ve**	**+ve**	**Supported**
	NI_MC	+ve	**+ve**	**+ve**	**Supported**
	CI_MC	+ve	**+ve**	**+ve**	**Supported**
	ΔNI_MC	+ve	Insignificant	Insignificant	Not supported
	ΔCI_MC	+ve	Insignificant	Insignificant	Not supported
Cramer's Z-test (H0: Model 6b mandatory > Model 6b voluntary)			-0.49 ($p < .312$)	-3.55 ($p < 0.001$)	**Supported^{p}**

Notes: +ve = positive and -ve = negative. The coefficients of change variables were positive, but not significant. Supported^{p} = partially accepted for nonfinancial firms.

5.5.3 Regression Analysis of the Incremental Value Relevance of Other Comprehensive Income and its Components

The second objective of this study focuses on testing the incremental value relevance of other comprehensive income and its components. Previous studies concluded incremental value relevance if the coefficients of other comprehensive income or its components are significantly different from zero (Kanagaretnam et al., 2009; Mechelli & Cimini, 2014) or when the adjusted R^2 increases once other comprehensive income or its components are added to the book value of equity and net income (Cahan et al., 2000; Kanagaretnam et al., 2009; Mechelli & Cimini, 2014). The main thrust of this position is that the valuation model that integrates different earnings components had a higher explanatory power than those based on one measure of earnings.

Table 5.16

Correlation Matrix and Pearson Correlation Coefficients for Incremental Value Relevance

Variables	SP_{it}	BVE_S_{it}	NI_S_{it}	OCI_S_{it}	LNI_{it}	$LOCI_{it}$	REV_S_{it}	SEC_S_{it}	PEN_S_{it}
Variables Used in the Price Model									
Panel A: Financial Firms									
SP_{it}	1								
BVE_{it}	0.421*	1							
NI_{it}	0.286*	0.114	1						
OCI_{it}	-0.064	-0.097	0.112	1					
LNI_{it}	-0.141	-0136	-0.064	-0.048	1				
$LOCI_{it}$	-0.062	0.025	0.143	-0.008	-0.063	1			
REVit	-0.225*	-0.104	-0.038	0.381*	-0.094	-0.233	1		
SECit	-0.154*	-0.121	0.078*	0.423*	-0.111	-0.452*	-0.063	1	
PENit	-0.091	-0.031	-0.011	0.291*	-0.133	-0.153*	0.011	0.146	1
Panel B: Nonfinancial Firms									
SP_{it}	1								
BVE_{it}	0.369*	1							
NI_{it}	0.354	0.143*	1						
OCI_{it}	-0.272*	-0.048	-0.153	1					
LNI_{it}	- 0.123*	-0.111*	-0.115*	-0.082	1				
$LOCI_{it}$	-0.107	0.048	0.187*	0.198*	0.083	1			
REVit	-0.073	0.064	0.065	-0.043	-0.052	-0.148*	1		
SECit	-0.059	-0.034	0.014	0.138*	0.155*	0.057	0.093	1	
PENit	-0.016	0.090	-0.034	-0.015	-0.052	-0.133*	-0.049	-0.008	1
Variables Used in the Return Model									
	RET	NI_MC	OCI_MC	LNI	LOCI	REV_MC	SEC_MC	PEN_MC	
Panel C: Financial Firm									
RET_{it}	1								
NI_{it}	0.290*	1							
OCI_{it}	-0.276*	0.061	1						
LNI_{it}	-0.129	-0.410*	-0.060	1					
$LOCI_{it}$	0.087	0.113	-0.076	0.063	1				
REVit	-0.205*	-0.070	0.049	-0.062	-0.218*	1			
SECit	-0.068	-0.072*	-0.092	-0.059	-0.413*	0.070*	1		
PENit	-0.002	-0.087	0.083	0.170*	-0.094	-0.039*	-0.012	1	
Panel D: Nonfinancial Firm									
RET_{it}	1								
NI_{it}	0.370*	1							
OCI_{it}	-0.002	-0.059	1						
LNI_{it}	-0.157*	-0.262*	0.030	1					
$LOCI_{it}$	0.034	0.020	-0.383*	0.083	1				
REVit	-0.161	-0.018	0.213*	0.078	-0.128*	1			
SECit	-0.053	0.021	0.152*	0.247*	-0.048	0.070*	1		
PENit	-0.100	-0.072	0.111*	0.071	-0.107*	0.062	0.081	1	

Notes: All the variables are as previously defined

Table 5.16 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 5.18 and Table 5.19 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.

5.5.3.1 Test for Model Specification for Incremental Value Relevance Estimations

The result of model specification test for incremental value relevance estimations is presented Table 5.17. 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 as a function of the book value of equity, net income, other comprehensive income and its components; and RET as a function of level and change earnings do not results in an unbiased inference.

Table 5.17
Test for Model Specification for Incremental Value Relevant Estimations

Sample Firms		Financial Firms		Nonfinancial Firms	
Models		_hat	_hatsq	_hat	_hatsq
Model 9	P-value	0.071*	0.409	0.037**	0.268
Model 10	P-value	0.094*	0.222	0.337	0.334
Model 11	P-value	0.170	0.178	0.042**	0.198
Model 12	P-value	0.036**	0.119	0.298	0.370

5.5.3.2 Findings and Discussions on the Incremental Value Relevance of Other Comprehensive Income

Panel A of Table 5.18 presents the pooled OLS regression result for the incremental value relevance test. It is evident that the coefficient of the book value of equity was positive and significant for both samples. Per share net income had a positive regression coefficient of 0.43 ($t = 2.93$, $p < 0.011$) and 0.50 ($t = 3.44$, $p < 0.001$) and were statistically significant for the two samples. When net income was deflated by the beginning price of equity, the results had regression coefficients of 0.59 ($t = 3.48$, $p < 0.001$) and 0.61 ($t = 4.57$, $p < 0.000$) and significantly better at 1 percent. Interestingly, the regression coefficients of other comprehensive income per share for the two cases were positive 0.35 ($t = 3.49$, $p < 0.001$) and 0.47 ($t = 3.49$, $p < 0.001$) and significant at 1 percent. The coefficient of other comprehensive income per beginning price of equity was only significant at 1 percent based on value of 0.57 ($t = 4.52$, $p < 0.000$) for financial firms. This finding, on average, suggests that other comprehensive income was positively priced in the Nigerian market. The inclusion of other comprehensive income slightly increases the coefficients of determination of the price models earlier presented in Tables 5.12 and 5.13.

Therefore, it is imperative to note that other comprehensive income reflects value relevant information used by investors in the Nigerian market. Based on the analysis presented above, other comprehensive income was continuously positive with coefficient greater than zero, but lower than that of the traditional net income. It was observed that once other comprehensive income was added to the book value of equity and the net income, increased explanatory power in the share prices and stock returns were observed when compared to a model run with a book value of equity and net income only (see summary of coefficient of determination in Table 5.20). This evidence is in line with the theoretical assumptions 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 just earnings per share alone.

Overall, this finding provides a strong indication that other comprehensive income per share and per beginning price provides incremental value relevant information in the Nigerian market, but with a coefficient lower that the traditional net income. Since the NG-GAAP was traditionally based on historical cost convention rather than fair value measurement, little was known about other comprehensive income in the NSE market prior to 2012. Recent issues regarding creative accounting unveiled by Ajay (2006), ROSC (2011) and Okaro et al. (2013), combined with the current economic crisis has awaken the interest of investors and policy makers to pay attention to other comprehensive income, as it is determined by fair value measurement. Again,

Table 5.18

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

		Financial Firms					Nonfinancial firms				
Variables	Sign	Coef.	Robust Std Error	t	P Value	VIF	Coef.	Robust Std Error	t	P Value	VIF
Panel A: Price Model											
CONS	+/-	0.1715	0.0495	3.46	0.001***		0.6005	0.1962	3.06	0.002***	
BVE_S_{it}	+	0.2696	0.1078	2.41	0.018**	1.14	0.6755	0.1999	3.38	0.001***	1.05
NI_S_{it}	+	0.4307	0.1469	2.93	0.004***	1.09	0.5043	0.1466	3.44	0.001***	1.09
OCI_S_{it}	+	0.3509	0.1006	3.49	0.001***	1.09	0.4716	0.1352	3.49	0.001***	1.01
LNI_{it}	-	-0.0436	0.0264	-1.65	0.101	1.04	-0.1538	0.1126	-1.37	0.173	1.04.
$LOCI_{it}$	-	0.0392	0.0411	0.95	0.343	1.21	0.0355	0.1472	0.24	0.810	1.05
$LNI*NI\_S_{it}$	-	-0.0842	0.0679	-1.24	0.218	1.05	-0.1526	0.1001	-1.52	0.129	1.02
$LOCI*OCI\_S_{it}$	-	0.1240	0.0882	1.41	0.162	1.20	-0.0234	0.1920	-0.12	0.903	1.02
Observations		123					226				
F-value/ Mean VIF				6.40	0.000***	1.12			8.35	0.000***	1.04
Adjusted R^2		35.60%					23.94%				
Panel B Return Models											
CONS	+/-	0.2900	0.0956	2.94	0.004***		1.9524	0.1886	10.36	0.000***	
NI_MC_{it}	+	0.5902	0.1697	3.48	0.000***	1.10	0.6129	0.1343	4.57	0.000***	1.16
ΔNI_MC_{it}	+	0.0822	0.5965	0.14	0.891	1.12	0.6028	0.7735	0.78	0.437	1.01
OCI_MC_{it}	+	0.5705	0.1263	4.52	0.000***	1.31	0.2164	0.6068	0.36	0.322	1.02
LNI_{it}	-	-0.1006	0.1067	-0.94	0.348	3.21	-0.1555	0.1595	-0.99	0.208	1.08
$LOCI_{it}$	-	0.0123	0.0732	0.17	0.867	1.34	0.0238	0.1537	0.15	0.506	1.06
$LNI*NI\_MC_{it}$	-	-0.0875	0.1302	-0.67	-0.503	3.15	-0.0781	0.0467	-1.67	0.097*	1.03
$LOCI*OCI\_MC_{it}$	-	0.0280	0.0658	0.43	0.671	1.01	0.1143	0.1995	0.57	0.568	1.08
Observations		89					152				
F-value/Mean VIF				4.74	0.000***	1.75			7.57	0.000***	1.06
R^2		24.01%					18.35%				

Notes: BVE_S_{it} = per share book value of common equity; NI_S_{it}: net income per share; OCI_S_{it} = other comprehensive income per share; LNI_{it} and $LOCI_{it}$ are indicator variables which equal 1 if earnings is negative and 0 if otherwise. $LNI*NI\_S_{it}$ and $LCI*OCI\_S_{it}$ are interaction terms for loss firms.

Panel B Return: NI_MC_{it} = net income deflated by the beginning price; OCI_MC_{it} = other comprehensive income deflated by the beginning price. Additional suffix "Δ" denotes a change between period *t*-1 and t for each variable respectively; LNI_{it} and $LOCI_{it}$ are indicator variables which equal 1 if an earnings is negative and 0 if otherwise. $LNI*NI\_MC_{it}$ and $LOCI*OCI\_MC_{it}$ are interaction terms for loss firms and *i* and *t* refer to firm and year. *, **, ***denote significance at the 10%, 5%, and 1% levels respectively.

presentation of a comprehensive income statement, which specifically focuses on other comprehensive income, may have increased its value relevance because of the increased transparency and clarity of financial reporting quality as against limited disclosure claimed in the NASB (2010) and ROSC (2011).

Findings on the incremental value relevance of other comprehensive is of great importance, because they cast some light on the under-studied issue of other comprehensive income in the NSE market. This is particularly important given the difference in corporate governance system, market development and regulations of the NSE market compared to studies from Anglo-Saxon and continental Europe extensively debated in the literature. Thus, this study finds no evidence to reject H_{2a}, which hypothesised that other comprehensive income provides incremental value relevant information, but with a coefficient lower than that of the traditional net income in the Nigerian capital market. Analysis on the incremental value of the components of other comprehensive income is presented next.

5.5.3.3 Findings and Discussions on the Incremental Value Relevance of Components of Other Comprehensive Income

Table 5.19 presents the regression results of the test of H_{2b}, which hypothesised that the components of other comprehensive income would provide incremental value relevant information, but 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 REV_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 REV_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 REV_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, REV_S could be employed as valuation input for assessing the market value of a firm. Perhaps, REV_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 SEC_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, SEC_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.

Table 5.19

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	P-Value	VIF
Panel A Price Model											
CONS	+/-	0.2043	0.0460	4.45	0.000***		0.6381	0.2083	3.06	0.002***	
BVE_S_{it}	+	0.3210	0.1020	2.92	0.004***	1.10	0.6617	0.1999	3.31	0.001***	1.07
NI_S_{it}	+	0.5003	0.1581	3.17	0.002***	1.22	0.5027	0.1471	3.42	0.001***	1.04
LNI_{it}	-	-0.0303	0.0277	-1.09	0.277	1.04	-0.1690	0.1131	-1.49	0.137	1.04
LNI_{it}* NI_S_{it}	-	-0.0509	0.0726	-0.70	0.485	1.04	-0.1560	0.0972	-1.61	0.110	1.02
REV_S_{it}	+	0.3159	0.0956	3.30	0.001***	1.18	0.5967	0.2346	2.54	0.012**	1.03
SEC_S_{it}	+	-0.1020	0.0488	-2.09	0.039**	1.02	-0.3815	0.2769	-1.38	0.170	1.02
PEN_S_{it}	+	0.1184	0.1297	0.91	0.363	1.02	-0.6861	0.3866	-1.77	0.077*	1.01
No. of observations		123					226				
F-value/Mean VIF				5.45	0.000***	1.09			9.06	0.000***	1.03
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	0.000***	
NI_MC_{it}	+	0.6488	0.1453	4.47	0.000***	1.08	0.6281	0.1305	4.81	0.000***	1.09
ΔNI_MC_{it}	+	-0.0232	0.5917	0.04	0.969	1.12	0.6595	0.7935	0.83	0.407	1.03
LNI_{it}	-	-0.0107	0.0534	-0.20	0.841	1.23	-0.1317	0.1626	-0.81	0.419	1.09
LNI_{it}* NI_MC_{it}	-	0.1205	0.1863	0.65	0.519	1.09	-0.0779	0.0456	-1.71	0.090*	1.02
REV_MC_{it}	+	0.3870	0.2014	1.92	0.057*	1.08	0.7517	0.7271	1.03	0.303	1.13
SEC_MC_{it}	+	-0.3252	0.1490	-2.10	0.038**	1.07	-0.6070	0.3117	-1.95	0.053*	1.13
PEN_MC_{it}	+	0.1764	0.1220	1.45	0.151	1.08	0.1068	0.5366	0.20	0.842	1.04
No. of observations		89					152				
F-value/Mean VIF				6.58	0.001***	1.11			8.24	0.000***	1.08
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; REV_S_{it} = per share changes in revaluation surplus; SEC_S_{it} = per share changes in gains and losses on re-measuring available-for-sale financial assets; PEN_S_{it} = per share actuarial gains and losses on defined benefit plans, LNI and LNI*NI_S_{it} is an indicator and its interaction 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*-1; REV_MC_{it} = changes in revaluation surplus deflated by the beginning price of equity; SEC_MC_{it} = changes in gains and losses on re-measuring available-for-sale financial assets deflated by deflated by the beginning price of equity; PEN_MC_{it} = actuarial gains and losses on defined benefit plans deflated by the beginning price of equity; LNI and LNI*NI_MC_{it} is an indicator and its interaction terms for loss firms and *i* and *t* refer to firm and year. *, **, and ***denotes significance at the 10%, 5%, and 1% levels respectively.

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 PEN_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).

A plausible reason for the finding may that, during the sample period, especially in the mandatory regime, adjustment to pension liabilities was relatively persistent, but mostly at a loss (see Table 5.6). 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 (IAASB, 2008), 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 the components of other comprehensive income 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.

Table 5.20
Summary of Coefficient of Determination (R^2) on Earnings Combinations

Earnings Inclusion	Financial Firms		Nonfinancial Firms	
Models	Price	Return	Price	Return
NI+OCI				
R^2	35.60%	24.01%	23.94%	16.54%
AIC	1.148	1.889	4.521	4.268
BIC	-428.5	-287.7	-177.3	-90.7
NI_REV+SEC+PEN				
R^2	32.57	30.15%	23.99%	16.84%
AIC	1.146	1.764	4.515	4.259
BIC	-409.9	-301.4	-172.3	-90.4

Notes: Table 5.20 delineates the incremental value relevance of other comprehensive income and its components. AIC denotes Akaike's Information Criterion and BIC is Bayesian Information Criterion. Both emphasized the model with a lower value to be more suitable for analysis. All models that incorporate dirty surplus flows have lower AIC and BIC values, which underscore the importance of multiple financial performance indicators for equity valuation. The exception is the price model in the case of financial firms.

5.5.3.4 Findings and Discussions on the Value Relevance Difference of Other Comprehensive Income Between Mandatory and Voluntary Regimes

Table 5.21 shows the result of incremental value relevance difference of other comprehensive income between the voluntary and mandatory accounting regimes. Other comprehensive income for financial firms was significant for the two regimes at 10 and 1 percent respectively. When using nonfinancial firms, other comprehensive was only positive and significant at 1 percent during the mandatory regime. Again, the R^2 of models based on mandatory regime was greater for the subsample of financial and nonfinancial firms. The results of the Cramer's Z-test of difference in the Table 5.21 indicates a significant difference in the value relevance of other comprehensive income between the two regimes based on Cramer's Z-scores of -2.40 ($p < 0.008$) and -1.34 ($p< 0.0.090$) for financial and nonfinancial firms respectively. Thus, no evidence was found to reject H_{2c} that hypothesised a significant difference in the incremental value relevance of other comprehensive income between mandatory

and voluntary comprehensive income reporting regimes in the Nigerian capital market.

Table 5.21
Value Relevance Differences of Other Comprehensive Income Between Voluntary and Mandatory Regimes

Variable	Coef.	Std Error	t	VIF	Coef.	Std Error	t	VIF
Voluntary Regime- Fiancial Firms (n=33)					*Nonfinancial Firms (n=52)*			
CONS	0.13	0.12	1.07	-	0.16	0.49	0.33	-
BVE_S_{it}	0.44	1.31	0.63	1.56	1.33	1.23	1.08	1.32
NI_S_{it}	0.34	0.26	1.32	1.55	0.59	0.28	2.09**	1.11
OCI_S_{it}	0.86	0.47	1.84*	2.28	0.28	0.33	0.87	1.03
LNI_{it}	0.03	0.08	0.38	1.14	0.27	0.86	0.31	2.75
$LOCI_{it}$	0.21	0.13	1.65	2.86	0.10	0.38	0.27	1.12
$LCI*NI\_S_{it}$	-0.12	0.11	-0.65	-1.11	-0-05	1.32	-1.04	2.48
$LOCI*OCI\_S_{it}$	0.18	0.21	0.86	1.49	-0-52	0.43	-1.19	1.50
F-statistics			3.08**				1.62	
R^2			37.79%				16.27%	
Mean VIF				1.33				1.62
Mandatory Regime (n=63)					*(n=112)*			
CONS	-0.05	0.07	-0.74	-	0.75	0.27	2.80***	-
BVE_S_{it}	0.80	0.38	2.11**	1.23	0.59	0.20	2.90***	1.10
NI_S_{it}	0.74	0.12	6.13***	1.08	0.64	0.22	2.94**	1.20
OCI_{it}	0.32	0.12	2.72***	1.08	0.50	0.18	2.82**	1.01
LNI_{it}	-0.16	0.03	-0.56	1.23	-0.07	0.14	-0.47	1.10
$LOCI_{it}$	-0.09	0.05	1.60	1.07	-0.14	0.19	-0.75	1.14
$LNI*NI\_S_{it}$	0.004	0.05	0.11	1.08	-0.20	0.12	-1.73*	1.04
$LOCI*OCI\_S_{it}$	0.15	0.09	1.72*	1.28	0.30	0.26	1.14	1.05
F-statistics			11.47***				6.90***	
R^2			58.36%				24.82%	
Mean VIF				1.16				1.09
Cramer's Z-test (H0: Model 9 mandatory > Model 9 voluntary)								
Cramer Z-Scores		-2.40	P < 0. 008			-1.34	P < 0.090	

Notes: Table 5.21 presents the results of the differences between voluntary and mandatory comprehensive reporting. BVE_S_{it} = per share book value of common equity; NI_S_{it} = income per share; OCI_S_{it} = other comprehensive income per share; LNI_{it} and $LOCI_{it}$ are indicator variables which equal 1 if negative earnings and 0 if otherwise. $LNI*NI\_S_{it}$ and $LOCI*OCI\_S_{it}$ are interaction terms for loss firms and *i* and *t* refer to firm and year. *, **, and ***denote significance at the 10%, 5%, and 1% levels respectively.

Overall, the above analysis indicates the superiority of other comprehensive income under the mandatory comprehensive income reporting regime compared to the

voluntary regime. This evidence suggests that accounting information reported under the IFRS is higher in terms of value relevance compared to the NG-GAAP numbers. Specifically, the results confirmed the view that other comprehensive income becomes more important input for firm valuation after the introduction of IAS/IFRS. Before the transition to IFRS, investors in the NSE had all the necessary information to calculate other comprehensive income tht was scattered within the annual report, which increased the propensity of losing important earning amount and increase information processing costs. In the voluntary comprehensive income reporting regime, other comprehensive income is traditionally measured using historical cost rather than fair value, measurements, but with its new focus on fair value, this would lead to an increase in the value relevance of other comprehensive income in the mandatory regime.

Thus, H_{2c}, which hypothesised that the value relevance of other comprehensive income in the mandatory regime is greater than the voluntary regime in the Nigerian capital market was therefore accepted. Fasan, Fiori and Venice (2014) documented similar finding that post IAS/IFRS in 2005 and IAS 1 Revised in 2009 in continental Europe, lead to increase in the value relevance of comprehensive income in the mandatory regime. Likewise, Marchinia and D'Este (2015) their study of Italian firms revealed that first-time adoption of comprehensive income reporting significantly affected Italian reporting firms due extensive use of the historical cost accounting model. As Barth et al. (2008), Barth et al. (2012) and Kim (2013) documented, this finding demonstrates the benefits of the IFRS financial reporting framework.

Table 5.22

Comparison Between Predicted and Actual Results of Price and Return Models

Valuation Theory	Proxy	Actual Financial	Actual Nonfinancial	Supported
Incremental Value Relevance of Other Comprehensive Income (H_{2a})				
Price Model	BVE_S	**+ve**	**+ve**	**Supported**
	NI_S	**+ve**	**+ve**	**Supported**
	OCI_S	**+ve**	**+ve**	***Supported**
Price Model	NI_MC	**+ve**	**+ve**	**Supported**
	ΔNI_MC	Insignificant (+ve)	Insignificant (+ve)	Not Supported
	OCI_MC	**+ve**	Insignificant (+ve)	***Supported**
Incremental Value Relevance of Components of Other Comprehensive Income(H_{2b})				
Price Model	BVE_S	**+ve**	**+ve**	**Supported**
	NI_S	**+ve**	**+ve**	**Supported**
	REV_S	**+ve**	**+ve**	***Supported**
	SEC_S	-ve	Insignificant (-ve)	Not Supported
	PEN_S	Insignificant (+ve)	-ve	Not Supported
Return Model	NI_MC	**+ve**	**+ve**	**Supported**
	ΔNI_MC	Insignificant (+ve)	Insignificant (+ve)	Not Supported
	REV_MC	**+ve**	Insignificant (+ve)	***Supported**
	SEC_MC	-ve	-ve	Not Supported
	PEN_MC	Insignificant (+ve)	Insignificant (+ve)	Not Supported
Cramer's Z-test (H0: Model 9 mandatory > model 9 voluntary)		-2.40 ($p < 0.008$)	-1.34 ($P < 0.090$)	**Supported**

Note: +ve = Positive; -ve = Negative; *indicates that the variable supported valuation theory, but with a coefficient lower that the net income.

Table 5.22 summarise the results of H_{2a}, H_{2b} and H_{2c} by comparing the predicted and actual results of price and return regressions. As hypothesised in H_{2a}, OCI_S fully supported the valuation implications with a coefficient lower than NI_S for both sub-sample firms. When the dependent variable is stock returns, OCI_MC was only supported for financial firms. On the incremental value relevance of other comprehensive income items, REV_S lend support to the valuation theory for both sub-sample firms. Note that REV_MC was only supported when using financial firms. The results concerning SEC_S and SEC_MC were constantly against the

theory. The coefficients of PEN_S and PEN_MC were positive, but not significant enough to corroborate the theory, except for PEN_S for nonfinancial firms. Even though it is only fair value gains and losses on the non-current assets provided incremental information, this study does not reject H_{2b}. H_{2c} that hypothesised increase value relevance of other comprehensive income following the implementation of IFRS is fully accepted.

5.6 Robustness Test

To test the robustness of the findings documented in this study, this section provides a sensitivity analysis of the previous models of market-based measures relating to firms' fixed effect, specific firm characteristics and choice of a deflator.

First, recall that the full sample of this study comprised 226 firm-year observations from 81 nonfinancial firms and 123 firm-year observations representing 36 financial firms covering 2010 to 2014. The time coverage and the number of units in the data set may suggest two general forms of dependence, which could be time series or cross-sectional dependence or both (Wooldridge, 2007; Petersen, 2009)[1]. Given the time series dependence of the previous basic models, OLS standard errors clustered at the firm level were used to re-estimate the previous price and the return models following Song et al. (2010), Goncharov and Hodgson (2011), Mechelli and Cimini (2014).

[1] Under time series dependence or what is called unobserved firm fixed effects (Wooldridge, 2007), "the residuals of a given firm may be correlated across years for a given firm". Likewise, in cross-sectional dependence (time effect), "the residuals of a given year may be correlated across different firms".

Untabulated results presented in Appendix D confirmed the predicted hypotheses. The result of the models clustered at the firm level demonstrates that the regression coefficients, the sign and the significance level for each variable were consistent with the basic models. Using the price and the return models, the sensitivity analysis further confirmed that traditional net income was superior to comprehensive income as the regression coefficients of the former were always higher than those of the latter. Moreover, an additional test shows that investors price other comprehensive income positively in the Nigerian market as the case with the basic models. It is noteworthy that the consistency of esults of OLS standard errors clustered at the firm level with those of basic models presented in this section indicate that findings were not bias due to the likelihood of heteroskedastic.

Second, the primary analysis demonstrates greater value relevance of the net income over comprehensive income in isolation of firm specific characteristics. It is appealing to investigate whether the findings remain unaffected after the inclusion of firm' characteristics. Equations 6a and 7a were re-estimated wherein other information such firm size, foreign liberalization, industry and auditor's reputation variables were included as additional independent variables. As discussed in Chapter 2, most of these variables (see Appendix E) were found to be significant and the re-estimated results are qualitatively similar to the previous basic models given positive and statistically coefficients of financial performance indicators. Again, the traditional net income continues to dominate comprehensive income. This evidence suggests that findings for basic models presented in this chapter were not sensitive to firm specific characteristics.

The third sensitivity analysis involves deflator selection, which is intended to check the robustness of the previous findings documented for the basic price models for scale bias[2]. In line with Hung and Subramanyam (2007), Barth et al. (2008) and Tsalavoutas et al. (2012), Equations 6a and 7a were re-estimated whereby all independent variables were deflated by the beginning market value of equity. Untabulated results presented in Appendix F showed that earnings components are insensitive when using the beginning market value of equity. Like that documented when the deflator was outstanding shares, models that include the net income have greater R^2 than those including comprehensive income for both subsample firms. More so, the result in re-estimating incremental information models (9 and 11) on other comprehensive income and its components are qualitatively similar to the previous primary models.

5.7 Summary

This chapter provides findings to answer the first two research questions of this study, which are: 1) Does the traditional net income provide more value relevant information than comprehensive income? 2) Do other comprehensive income and its components provide incremental information beyond net income?

For all analyses, the price-earnings and the return-earnings models were used based on financial and nonfinancial data partition. Three major findings were documented in this section. First, the dominance of net income over the comprehensive income was established and it was supportive of valuation implications posited in $H_{1a.}$ H_{1b}

[2] A common problem in value relevance research when the deflator is the outstanding share is the scale bias, which may introduce heteroskedasticity. While the price models used in this study do not pose serious problems of heteroskedasticity, an alternative deflator (the beginning market value of equity) was used executed in Tsalavoutas et al. (2012) and Mechelli and Cimini (2014).

predicted a significant difference in the value relevance of comprehensive income between voluntary and mandatory reporting regimes. The results of the Cramer's Z-test were only statistically significant for samples of financial firms.

Second, evidence of incremental value relevance of other comprehensive income per share for the two subsamples was documented, but with a coefficient lower than that of the traditional net income consistent with H_{2a}. The incremental value relevance test revealed that only fair value gains and losses on non-current assets reflected value relevant information with a coefficient lower than that of the traditional net income (H_{2b}). Thus, prediction of H_{2b} was partially accepted. For the two samples, the results of H_{2c} revealed a significant difference in the quality of other comprehensive income between voluntary and mandatory comprehensive income reporting regimes. In the final section, the robustness tests were conducted to verify all the findings documented based on the basic models. Interestingly, the results were qualitatively similar.

CHAPTER SIX

FINDINGS AND ANALYSIS II

THE IMPACT OF RELIABILITY FACTORS ON THE VALUE RELEVANCE OF OTHER COMPREHENSIVE INCOME

6.0. Introduction

The results of the relative and incremental value relevance were presented in the preceding chapter. This chapter presents the findings of the second main issue that examined the effect of reliability factors on the value relevance of other comprehensive income and its components. Section 6.1 delineates the descriptive statistics of the variables used to proxy reliability. Section 6.2 presents the multivariate analysis. Specifically, the chapter provides the findings for the impact of corporate governance mechanisms, effect of fair value hierarchy information and compliance with IFRS mandatory disclosure. Section 6.3 presents the sensitivity analysis to check the robustness of the findings. Finally, Section 6.4 presents summary of the chapter.

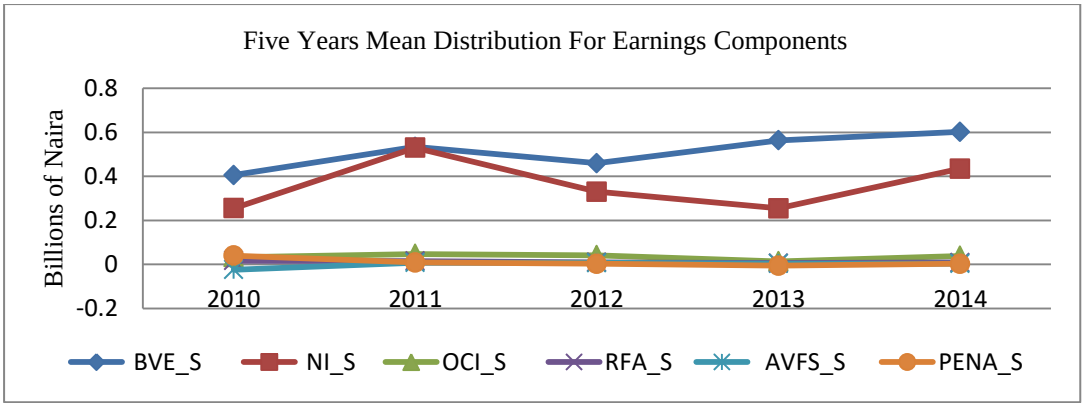
6.1 Descriptive statistics

Recall that the analysis in Chapter Five was based on the sub-sample of financial (123 firm-year observations) and nonfinancial firms (226 firm-year observations). For all analyses in this section, a combined sample was used for the four (4) reasons discussed in Section 4.3.2. One measurement of reliability used in this study is the corporate governance mechanism; a factor score derived using PCA. PCA required sample adequacy to reduce the propensity of errors, enhance the accuracy of population estimates and increase the generalization of the results. Thus, in this

section, analysis was based on 327 firm-year observations after eliminating observations without a full annual report for the data extraction purposes.

Table 6.1, Panel A shows the descriptive statistics on the relative size of the traditional net income and other fair value components of earnings of 327 firm-year observations. For clarity, Figure 6.1 shows a cross-sectional per share means of these earnings components. The mean (median) of SP was ₦9.78 (₦2.68) Naira for the period of 2010 to 2014, suggesting that the sample firms exhibited positive share prices as was the case with independent sample data in the previous chapter. The pooled five-year mean (median) net income was ₦36.51 (₦0.09) billion. Looking at Figure 6.1, there is a monotonic decrease in the mean value over the years. The average (median) other comprehensive income was ₦3.37 (₦0.01), which is far lower than the net income as depicted by the graph.

The mean of REV_S was ₦0.93, SEC_S was ₦0.36 and PEN_S was ₦0.32 billion with zero median values. The zero medians suggest a low frequency and magnitude of the components of other comprehensive income over the study period. Nevertheless, even if the magnitudes of the components of other comprehensive income are lower when compared to the bottom-line measure, the negative minimum values signify a material impact. This is consistent with Kanagaretnam et al. (2009) and Khan and Bradbury (2014) for samples of Canadian and Unites States firms.



Notes: Cross-sectional time series means of earnings components (n = 327 firm-year observations), where BVE_S= per share book value; NI_S= net income per share; OCI_S = other comprehensive income per share; REV_S = per share gain or loss on revaluation of noncurrent asset; SEC_S = per share fair value gains and losses on re-measuring available-for-sale financial assets and PEN_S = per share actuarial gains and losses on defined benefit plans.

Figure 6.1
Five Years Mean Distribution of Earnings Components

Table 6.1, Panel B delineates descriptive statistics relating to the corporate governance variables. The mean proportion of audit committee independence (ACIND) was 0.41 percent, which was less than the 51 percent recommended by CAMA 1990 and SCE 2011. The mean of audit committee expertise (ACEXP) was 0.07 with a minimum value of zero, indicating that not all firms have a chartered accountant sitting on the committee. This result is against the provision of CAMA 1990 and SEC 2011 that stipulate at least one chartered accountant was to be a member of the audit committee. While the frequency of audit committee meetings (ACMET) was between one to eight times annually, the mean of 3.49 suggests that, on average, the sample firms were about at the minimum threshold of four meetings annually. Audit committee size (ACSIZE) ranged between 2 and 7 with a mean proportion of 5.05 reflecting the audit committee size of more than five members, which was above the minimum of three recommended by CAMA 1990. Moreover, 89 percent of the sample observations did not report any material control weakness

problem, which seem relatively high and suggests sound internal control system. Approximately, 87 percent of the sample observations are audited by Big4 auditors.

Table 6.1
Descriptive Statistics Related to the Regression Variables for 2010-2014

Variables	Mean	Median	SD	Min	Max
Panel A: *Size of earning numbers (n=327)*					
SP_{it}	9.78	2.68	14.832	0.50	99.50
BVE_{it}	0.5321	0.2562	0.6835	0.0130	3.4050
NI_{it}	0.3651	0.0992	0.8970	-1.4486	5.6859
OCIit	0.0337	0.0059	0.1164	-0.2910	0.8334
REVit	0.0093	0.0000	0.0367	-0.1916	0.2800
SECit	0.0036	0.0000	0.0457	-0.5020	0.2205
PENit	0.0031	0.0000	0.0871	-0.5511	0.6554
LNI_{it}	0.0218	-0.4321	1.0181	0.0000	1.0000
$LOCI_{it}$	-0.0454	-0.3239	0.8391	0.0000	1.0000
Panel B: *Corporate Governance Variable (n=327)*					
$ACIND_{it}$ (member)	0.4080	0.5000	0.1351	0.0000	0.6670
$ACEXP_{it}$ (member)	0.0726	0.0000	0.1136	0.0000	0.6670
$ACMET_{it}$ (times)	3.4924	3.0000	1.0793	1.0000	8.0000
$ACSIZE_{it}$ (member)	5.0508	6.0000	0.8994	2.0000	7.0000
$AUDR_{it}$	0.8716	1.0000	0.3351	0.0000	1.0000
$NMICW_{it}$	0.8930	1.0000	0.3096	0.0000	1.0000
IND_{it}	0.3547	0.0000	0.4792	0.0000	1.0000
$FSIZE_{it}$	23.714	23.431	2.4227	16.524	32.583
FLB_{it}	0.1660	0.0000	0. 2395	0.0000	0.7900
Panel C: Fair Value hierarchy (n=327)					
FVAL1	0.3885	2.3700	7.0970	-0.1300	32.140
FVAL2	0.6205	0.4670	2.9861	-29.662	6.1405
FVAL3	0.3317	0.0823	0.9432	-0.7271	4.3080
Panel D: Compliance Score (n=274) for firm-year observations in the IFRS mandatory regime					
COMPL	0.5695	0.5919	0.1015	0.3123	0.8363
REVCOMPL	0.6036	0.6153	0.1469	0.2308	0.9231
SECCOMPL	0.5273	0.5333	0.1260	0.2667	0.8100
PENCOMPL	0.5792	0.5714	0.1409	0.2857	0.8571

Notes: Panel A provides descriptive statistics on the relative size of earnings components. SP_{it} = four-month share price after the financial year-end; BVE_{it} = per share the book value of common equity; NI_{it} = net income per share; OCI_{it} = other comprehensive income per share *t*; REVit = per share changes in revaluation surplus; SECit = per share changes in gains and losses on re-measuring available-for-sale financial assets; PENit = per share actuarial gains and losses on defined benefit plans; LNI_{it} and $LOCI_{it}$ are indicator variables which equals 1 if earnings is negative and 0 if otherwise and *i* and *t* refer to firm and year.

Panel B is the descriptive statistics of the corporate governance variables. $AIND_{it}$ = audit committee independence measured by the total number of independent directors divided by the number of total committee members; $ACEXP_{it}$ = proportion of audit committee financial expertise to the number of audit committee members; $ACSIZE_{it}$ = proportion of directors sitting on the audit committee to the total number of directors; $ACMET_{it}$ = the frequency of annual audit committee meetings; AUDR = assigned the value of 1 if Big 4 and 0 if otherwise; $NMICW_{it}$ = an indicator of whether the firm has not disclosed any material control weakness; IND_{it} = industry classification code; $FSIZE_{it}$ = is the log of market capitalization and FLIB = percentage of shares held by foreign investors.

Panel C: provides descriptive statistics on the fair value hierarchy based on Levels 1 to 3: FVAL1 = quoted price in the active market; FVAL2 = observable input; and FVAL3 = unobservable input.

Panel D: provides descriptive statistics on compliance scores for relevant accounting standard related to other comprehensive income items. REVCOMPL, SECCOMPL and PENCOMPL are compliance scores.

Panel C of Table 6.1 delineates descriptive statistics of variables used in the analysis of fair value relevance of the information hierarchy for other comprehensive income items. Like in Panel A, all variables are on a per-share basis. The average fair value asset of the quoted price on the active market (FVL1) was ₦0.39 billion. The mean Level 2 fair value assets, which is based on the observable input (FVL2) was ₦0.62 billion and Level 3 (FVL3) fair value assets based on the unobservable inputs (high level of subjectivity and less reliable) was ₦0.33 billion.

Panel D presents the descriptive statistics of compliance scores. The mean proportion and standard deviation for overall COMPL (the unweighted disclosure score) were 57 and 10 percent. The mean and standard deviation relating to REVCOMPL was 60 and 15 percent. The SECCOMPL had the mean and standard deviation of 53 and 12 percent, whereas PENCOMPL recorded a mean and standard deviation of 58 and 14 percent respectively. These statistics seem to suggest a low compliance with relevant accounting standards in establishing the fair value relating to the components of other comprehensive income. These are relatively low when compared with Street and Gray's (2001) study that documented a mean and standard deviation of 72 and 19 percent; and Hodgdon et al. (2010) who found 68 and 18 percent using a similar unweighted compliance score.

Thus, the mean COMPL levels documented in this study are somewhat low but are similar to previous statistics from emerging markets (Al-Shiab, 2003; Hassan et al., 2006; Al-Shammari et al., 2008) that have documented a low mean compliance. More specifically, the level of compliance for the sample of these studies ranged from 45 percent to 56 percent, which was about what is documented for the present study.

Like in other jurisdictions, this low COMPL level in Nigeria further confirms reporting incentives problems and weak enforcement claimed in the NASB (2010) and ROSC (2011).

6.2 Multivariate Analysis

This section tests Equations 14 to 19 to shed light on the impact of corporate governance mechanisms, fair value hierarchy information and compliance with relevant accounting standards as a test of reliability of other comprehensive income and its components.

6.3 Correlation Matrix for Variables Used in Price Regressions

Table 6.2 delineates the correlation matrix of accounting earnings, corporate governance and control variables. As documented in the sub-sample of financial and nonfinancial firms, the book value of equity, net income and other comprehensive income for the pooled sample were positively correlated with the SP. The corporate governance and control variables included are moderately correlated. Overall, the strength of the relationship between the independent variables was within the acceptable limit. Neither a variable with coefficients above 0.5 nor equations incorporating corporate governance and control variables with mean Variance Inflation Factors (VIF) greater than 10 were present. In Tables 6.3 and 6.4, variables such as the accounting numbers, BCGSCORE and individual governance models recorded a score of less than 2, suggesting the absence of serious multicollinearity problems.

Table 6.2

*Correlation Matrix and Pearson Correlation Coefficients for Earnings Components, Corporate Governance and Control Variable*s (n=327)

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	SP (N) $_{it}$	1																		
2	BVE_S$_{it}$	.236*	1																	
3	NI_S$_{it}$	.323*	.075	1																
4	OCI_S$_{it}$	.147	-.011	.090	1															
5	LNI$_{it}$	-.113*	-.143*	-.080	.039	1														
6	LOCI$_{it}$	.101*	.0002	.097*	.193*	.073	1													
7	REV_S$_{it}$	.130*	.011	-.119*	.013	-.026	-.102*	1												
8	SEC_S$_{it}$	-.087	.149*	-.030	-.067	.093*	.020	-.004	1											
9	PEN_S$_{it}$	.034	.005	-.030	-.050	-.044	-.125*	.029	.009	1										
10	BCGSCOR	.069	.055	-.007	.044	.017	.022	-.054	-.051	-.046	1									
11	ACIND$_{it}$	-.084	.020	-.032	-.103*	.035	.013	.001	.037	-.059	-.045	1								
12	ACEXP$_{it}$	.135*	.087	.047	-.112*	-.109*	-.132*	.034	-.098*	.148*	.047	-.026	1							
13	ACMET$_{it}$	-.008	.052	.128*	.013	.076	.101*	-.109*	-.054	.036	.052	.080	-.031	1						
14	ACSIZE$_{it}$	.129*	.083	.167*	-.036	-.078	.090	-.040	.011	.024	-.013	.057	-.005	.026	1					
15	AUDR$_{it}$	-.029	-.100*	-.045	.004	-.066	-.092*	.018	.094*	-.021	.161*	.038	.017	.014	-.058	1				
16	NMICW$_{it}$	-.061	.058	-.042	.071	-.002	-.037	-.054	.010	-.145*	.451*	.047	-.040	-.007	-.025	..340*	1			
17	IND$_{it}$	-.050	-.120*	.038	-.031	.038	-.0001	-.026	-.024	.076	-.012	-.056	-.092*	.016	.072	.130*	-.149*	1		
18	FSIZE$_{it}$	.282*	.171*	.108*	-.055	.011	.056	-.135*	-.088	.004	.008	.114*	.023	.233*	.157*	-.097*	-.034	-.067	1	
19	FLIB$_{it}$	.083	.172*	.016	-.034	-.016	.062	-.003	-.035	-.016	.046	-.002	.033	-.051	.038	-.063	-.097*	-.182*	-.053	1

Table 6.2 is the correlation matrix of earning components, corporate governance and control variables. All earnings components are as previously defined.

Corporate governance variables include: ACIND$_{it}$= audit committee independence measured by the total number of independent divided by the number of total committee members; ACEXP$_{i}$ committee financial expertise measured by the number of audit committee members with financial expertise divided by the number of total audit committee members; ACSIZE$_{it}$ = Audit commi measured by the number of directors sitting on the audit committee; ACMET$_{it}$ = the frequency of annual audit committee meetings; AUDR$_{it}$= auditor's reputation assigned the value of 1 if Big otherwise= NMICW$_{it}$ = an indicator of whether the firm has not disclosed any material control weakness.

Control variables are: FSIZE$_{it}$= firm's market capitalization; IND$_{it}$= industry SIC code; FLIB$_{it}$= percentage of shares held by foreign investors and i and t refer to firm and year

6.4 Regression Analysis on the Influence of Corporate Governance Mechanism on the Value Relevance of Other Comprehensive Income

So far, the literature has demonstrated that fair value earnings are value-relevant. However, because some fair value measurement involves management discretion, this discretion may induce earnings management (Dhaliwal et al., 1999; O'Hanlon & Pope, 1999; Lopes & Walker, 2012; Song et al., 2010; Lee & Park, 2013). Thus, investors could view fair value earnings as a less reliable measure of financial performance due to the potentials for both intrinsic estimation error and management-induced error (Song et al., 2010; Lee & Park, 2013). Nevertheless, the anecdotal and empirical literature suggests that an effective corporate governance mechanism forestalls opportunistic earnings management by managers by way of aligning the interests of the agents with those of the shareholders. This, in turn, provides credible and reliable accounting information to users of financial statements (Watts & Zimmerman, 1986). Thus, given the fact that effective corporate governance minimizes fraud in the financial reporting process, investors may place different weights on the reported fair value earnings such as other comprehensive income based on the firm's corporate governance mechanisms (Aboody et al., 2006; Habib & Azim, 2008; Bhat, 2009; Anandarajan & Hasan, 2010; Song et al., 2010; Lopes & Walker, 2012; Lee & Park, 2013).

To investigate the effect of corporate governance mechanisms on the value-relevance of other comprehensive income, PCA, a common type of factor analysis, was performed. Using PCA, a standardized governance score was created. This approach has the advantage of reducing random measurement errors and allows a parsimonious estimate of the underlying corporate governance quality (Habib & Azim, 2008; Song et al., 2010). Similar methodology has been used as a data reduction technique to

summarize investor characteristics (Bonner, Walther, & Young, 2003), firm characteristics (Baik, Farber, & Petroni, 2009), country-specific characteristics (Anandarajan & Hasan, 2010; Mechelli & Cimini, 2014) and corporate governance variables (Larcker & Richardson, 2007; Habib & Azim, 2008; Song et al., 2010; Sheu & Lee 2012).

6.4.1 Model Specification Test on the Effect of Corporate Governance Mechanisms

Following prior studies, a factor score (BCGSCORE), measuring corporate governance, which comprises six variables frequently associated with the integrity and reliability of accounting information was integrated into Equation 14 to test H_{3a} and H_{3b}. For explanatory purposes and to show the individual effect of each corporate governance measure, BCGSCORE is replaced with each individual corporate governance element. Table 6.3 presents the results of model specification tests of the effect of corporate governance mechanisms.

Based on the table, the values of the various link tests performed indicate that the models are well specified. The predicted values of the models (_hat) were significantas expected, whereas the _hatsq was in line with their econometric consideration (insignificance), implying that the models are well specified. Thus, specifying SP as a function of the book value of equity, net income, other comprehensive income and the interaction with corporate governance mechanisms is econometrically justified.

Table 6.3
Model Specification for Effect of Corporate Governance Mechanism

Models 14		Link Test	_hat	_hatsq
BCGSCORE		P-value	0.000***	0.077
INDP		P-value	0.000***	0.442
ACEXP		P-value	0.000***	0.150
ACMET		P-value	0.000***	0.166
ACSIZE		P-value	0.000***	0.167
AUDR		P-value	0.000***	0.323
NMICW		P-value	0.000***	0.128
RANK-	High	P-value	0.000***	0.437
	Low	P-value	0.000***	0.159

Note: The results of the link test showing no specification bias in estimating the book value of equity, net income, other comprehensive income, corporate governance mechanism and individual corporate governance variables as predictors of share prices. _hat, which denotes a variable of prediction is expected to be significant. _hatsq, which is the variable of squared prediction and is expected to be insignificant.

6.4.2 Findings and Discussion on the Influence of Corporate Governance Mechanisms on the Value Relevance of Other Comprehensive Income

Table 6.3, Panel A presents the principal component/correlation of the corporate governance measures. The eigenvalues variances of all the principal components (element of corporate governance) are presented. The first three principal components (audit committee: independence, expertise and meetings) had variances of 1.36, 1.09 and 1.02 explaining 23, 41 and 58 percent of the total variations respectively. The proportional representation of the variables was 23, 18 and 17 percent (1.36/6, 1.09/6 and 1.02/6) of the total variation in the governance variables. This suggests that 23, 18 and 17 percent of the variation of the corporate governance mechanism was explained in the first, second and third components respectively. The last three principal components (audit committee size, auditor's reputation and internal control system) have eigenvalues variance of 0.97, 0.91 and 0.65 with a proportionate variation of 16,

15 and 11 percent (0.97/6, 0.91/6 and 0.65/6) relative to the total governance variables variance. This statistic indicates that 16, 15 and 11 percent of the total variation in the corporate governance mechanism were explained by the fourth, fifth and the sixth principal components.

Table 6.4
Results for the Extraction of Principal Component Factors Analysis

Components	Eigenvalue	Difference	Proportion	Cumulative
Panel A: Principal components/correlation (Initial eigenvalues)				
Comp1	1.36	0.27	0.22	0.226
Comp2	1.09	0.06	0.18	0.407
Comp3	1.02	0.06	0.17	0.578
Comp4	0.97	0.06	0.16	0.739
Comp5	0.91	0.26	0.15	0.891
Comp6	0.65	-	0.11	1.000

Panel B: Principal Components(Eigenvectors)

	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Unexplained
ACIND	0.1545	0.6179	-0.3178	0.0916	0.6959	0.0233	0
ACEXP	-0.0725	-0.6190	-0.0735	0.6265	0.4456	0.1233	0
ACSIZE	0.0236	0.4524	0.4781	0.6954	-0.2820	0.0563	0
ACMET	-0.1754	-0.0474	0.7947	-0.3069	0.4866	-0.0667	0
AUDR	0.6877	0.1395	0.0944	0.0708	0.0284	-0.7020	0
NMICW	0.6831	-0.0929	0.1566	-0.1284	-0.0041	0.6955	0
Rho							1.00

Panel C: Rotated (VARIMAX Rotation) Component Analysis Factor Matrix

Comp1	0.6877	-0.0725	-0.1754	0.0236	0.1545	0.6831
Comp2	-0.1395	0.6190	-0.0474	0.4524	0.6179	-0.0929
Comp3	0.0944	0.0735	0.7947	0.4781	0.3178	0.1566
Comp4	0.0708	0.6265	-0.3069	0.6954	0.0916	-0.1284
Comp5	0.0284	0.4456	0.4866	-0.2820	-0.6954	-0.0041
Comp6	-0.7020	0.1233	-0.0667	0.0563	0.0233	0.6955

Panel D: Keiser-Meyer Measure of Sampling Adequacy

Variables	ACIND	ACEXP	ACSIZE	ACMET	AUDR	NMICW
KMO	0.5335	0.4571	0.4802	0.5455	0.5002	0.5006

Overall KMO = 0.5011

Panel E: Descriptive Statistics of Governance Factor Score and Ranking

	Mean	Median	Std Dev	Min	Max
BCGSCORE	1.58	0.60	1.62	0.00	5.66
RANK	0.77	1	0.42	0.00	1.00

Importantly, the values generated from the principal components analysis were uncorrelated with each other, suggesting that each of the first three principal components explained a separate proportion of 58 percent of the total variance. Thus,

using the first three corporate governance mechanism, only 58 percent variation was explained. Extending the components to the last three components explained 89 percent of the variance in the principal components. This implies that, when corporate governance elements are combined, the measure can satisfactorily represent a corporate governance mechanism (BCGSCORE). As indicated in the last column of Panel B, unexplained variances were all zero, and Rho = 1.00. These results corroborate previous principal component analysis on data decomposition (Habib & Azim, 2008; Song et al., 2010; Sheu & Lee, 2012).

Table 6.3, Panel B presents principal component eigenvectors indicating factor loading for each element of governance variables. As expected, most of the governance variables were positively loaded in determining BCGSCORE. Panel C presents the varimax orthogonal rotation factor loadings, which indicates how each element of governance variables is weighted for BCGSCORE. Panel D delineates the Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser, 1974) of the six governance variables. The mean Kaiser-Myer-Olkin measure of sampling adequacy obtained was 0.5011, which is slightly greater than 0.5. As documented in Stewart (1981), the Kaiser-Myer-Olkin value suggests that BCGSORE is a suitable latent construct of the six individual variables. Panel E reveals the statistics of the standardized BCGSCORE from the factor analysis showing the mean (median) 1.58 (0.60) and a standard deviation of 1.62. Based on the BCGSCORE, RANK based on the median value was created ranging 0 to 1 for high low governance firms for further analysis.

Table 6.5 presents the results of the overall effect of corporate governance mechanisms on the value relevance of OCI_S and valuation differences between high and low governance firms. The valuation effect of BCGSCORE on OCI_S was presented in Panel A of Table 6.5. The coefficient on OCI_S is interpreted as the valuation of OCI_S for the full sample. The coefficients on the interaction term represents incremental valuations of OCI_S given corporate governance mechanism. In Panel A, BVE_S and NI_S were positive and statistically significant at 1 percent. As expected, the coefficient of OCI_S was positive and significant at 10 percent. This indicates that aggregate dirty surplus flows are weakly priced. Interestingly, the coefficients on the interaction term (OCI_S* BCGSCORE) was positive and statistical significant at 5 percent. This result suggests an incremental value relevance of fair value earning when conditioned for corporate governance mechanisms as Song et al. (2010) and Lee and Park (2013) documented. This suggests that the perceived effectiveness of monitoring mechanisms may motivate investors to place heavy weights on the reported accounting earnings as Habib and Azim (2008) and Lee and Park (2013) documented.

Panel B Table 6.5 shows the result of sample partitioned for high and low corporate governance firms based on the median value of BCGSCORE. The coefficient of OCI_S without interaction is interpreted as fair value valuation of low governance firms. The coefficient of the interaction term (OCI_S*RANK) captures the incremental valuation when moving from weak to strong corporate governance firms. The result in Panel B shows that the regression coefficient on the book value of equity and net income were positive and significantly better at 1 percent. The coefficient of

OCI_S without interaction terms was positive and significant at 10 percent as predicted for β_7 in Equation 14.

Table 6.5

Regressions Using Governance Rank Covering 2010- 2014 When N=327 (Dependent Variable= Share Price)

Variable		Panel A Effect of BCGSCORE on OCI_S				Panel B Sample Partition for High and Low Firms			
	Sign	Coef.	Std Error	t	VIF	Coef.	Std Error	t	VIF
CONS	+/-	-3.49.	1.30	-2.67***	-	-3.99	1.32	2.94***	-
BVE_S_{it}	+	0.67	0.26	3.67***	1.13	0.64	0.22	2.92***	1.14
NI_Sit	+	0.70	0.17	4.24***	1.77	0.73	0.17	4.26***	1.79
OCI_S_{it}	+	0.32	0.18	1.73*	1.21	0.32	0.19	1.74*	1.21
$BCGSCOREi_t$	?	-0.02	0.07	-0.34	1.05	-	-	-	-
$RANK_{it}$	?	-	-	-	-	-0.01	0.21	-0.04	1.05
LNI_{it}	+	-0.01	0.10	0.03	1.21	0.01	0.10	0.14	1.21
$LOCI_{it}$	-	-0.12	0.14	-0.08	1.03	0.04	0.13	0.30	1.04
$OCI\_S*BCGSCORE_{it}$		0.16	0.07	2.15**	1.09	-	-	-	-
OCI_S*RANK_{it}	+	-	-	-	-	0.56	0.33	1.69*	1.07
$LNI*NI\_S_{it}$	-	0.11	0.09	1.29	1.02	0.16	0.10	1.70*	1.05
$LOCI*OCI\_S_{it}$	+	0.06	0.09	0.60	1.13	0.03	0.09	0.35	1.13
$FSIZE_{it}$	+	0.16	0.56	3.48***	1.13	0.16	0.06	2.85	1.16
IND_{it}	+	0.00	0.00	1.46	1.04	0.00	0.00	1.39	1.03
$FLIB_{it}$	+	0.14	0.14	2.78***	1.67	0.14	0.04	3.45	1.64
F-statistics				5.77***				5.76***	
R^2		35.08%				35.86%			
Mean VIF					1.21				1.21

Notes: Table 6.5 delineates the influence of corporate governance mechanism for the full simple and sample partitioned for high and low governance firms. BVE_S_{it} = per share book value of common equity; NI_S_{it} = net income per share; OCI_S_{it} = aggregate other comprehensive income per share; BCGSCOREit = is corporate governance scores; $RANK_{it}$ = the median rank of $BCGSCORE_{it}$, ranging from 0 to 1; LNI_{it} and $LOCI_{it}$ are indicator variables that equal 1 if earnings are negative and 0 if otherwise. $OCI\_S*BCGSCORE_{it}$ and OCI_S*RANK_{it} are interactions with OCI_S; $LNI*NI\_S_{it}$ and $LOCI*OCI\_S_{it}$ are interaction terms for loss firms and *i* and *t* refer to firm and year.

*, **, and *** denote significance at the 10%, 5%, and 1% levels respectively

Interestingly, the coefficient of the interaction term was positive and significant at 10 percent. To determine the impact of strong corporate governance on the valuation of other comprehensive income, the coefficients of the non-interaction term (OCI_S) with that of the interaction term (OCI_S*RANK) are added. The sum of these coefficients indicates the impact of strong corporate governance on the value relevance of other comprehensive income as Song et al. (2010) posited. For strong

governance firms, valuations of OCI_S increased to near 1 (0.88 sum of 0.32 and 0.56), suggesting an increased reliability of other comprehensive income given strong corporate governance practices.

Therefore, the results for testing the overall impact of corporate governance mechanisms and findings based on sample partitioned for low and high governance firms lend support to the valuation theory on investors pricing of OCI_S and reduced agency cost of information asymmetry. The result also concurs with previous evidence on the impact of a strong corporate governance mechanism on the value relevance of accounting numbers (Penman, 2007; Habib & Azim, 2008; Song et al., 2010; Lee & Park, 2013). These studies affirmed that the effectiveness of corporate governance and competence of independent monitors is critical in reducing intentional manipulation of fair value inputs. Thus, no evidence found to reject H_{3a}, which hypothesised that the strength of the corporate governance positively influences the value relevance of other comprehensive income in the Nigerian capital market. This result holds for the sample of high and low corporate governance firms. It was therefore concluded that market participants in the Nigerian capital market were likely to rely more on the mark-to-model gains and losses based on corporate governance practices, especially for strong corporate governance firms.

Further analyses highlight the role of each governance element to the generalization of the major finding. Specifically, the result presented in Model 1 indicates that the interaction between the audit committee independence and other comprehensive income (OCI_S*ACIND) was positive, but not statistically significant. This result is contrary to the belief that when the majority of the members of the audit committee

are independens, management will find it more difficult to object when they raise critical issues and when they endorse external auditor recommendations to correct the errors detected in the financial statements. At best, the finding presented in Model 1 reflects no effect of audit committee independent on the reliability of other comprehensive income in Nigeria. This finding can be supported by the fact that the independence of the audit committee is not well ingrained in the NSE market because the majority of the sample firms do not meet the required proportion of audit committee independence. Other studies have arrived at a similar conclusion that audit committee independence does not translate into the quality of accounting information (Rainsbury et al., 2009; Suárez et al., 2013).

Next is the influence of audit committee expertise on the reliability of other comprehensive income. The result presented in Model 2 indicates a positive, but not significant coefficient when other comprehensive income is interacted with audit committee expertise (OCI_S*ACEXP). This implies that an audit committee expert sitting on the audit committee does not enhance the quality of fair value earnings such as other comprehensive income. Just like the international best practices, Nigeria CAMA and SEC 2011 required that at least one audit committee member should possess financial/auditing expertise. The descriptive statistic shows that most Nigerian firms had no financial/auditing expertise sitting in their audit committee. This practice may help explain the low predictive power of the audit committee financial/auditing expertise in enhancing the reliability of other comprehensive income in Nigeria. Rainsbury et al. (2009) documented similar result on the irrelevance of audit committee financial/auditing expertise in enhancing the quality of accounting information. This position is contrary to previous studies that recognised the expertise

of the audit committee as a fundamental factor in reducing earnings management, curtailing financial restatements, reducing internal control weakness and stimulating positive stock market reactions (Agrawal & Chadha, 2005; Karamanou & Vafeas, 2005; Naiker & Sharma, 2009).

Similarly, Model 3 shows that the coefficient on the interaction between other comprehensive income and audit committee size (OCI_S*ACSIZE) was positive and significant. This implies that the composition of an audit committee in terms of number positively influenced the value relevance of other comprehensive income. This result is in the same direction of Yang and Krishnan (2005) and Lin, Li and Yanget (2006) who documented a positive influence of a large audit committee on the financial reporting quality.

Moreover, an audit committee that meets frequently to review the internal accounting controls and audit process tends to be more effective and focused on the financial reporting quality and hence quality of accounting information (Abbott & Parker, 2000; Barua et al., 2010; Woidtke & Yeh, 2013). In this study, the coefficient on the interaction between audit committee meeting and aggregate other comprehensive income (OCIS_S*ACMET) was positive and statistically significant at 5 percent. This implies that the frequency of meetings has an incremental effect on the value relevance of other comprehensive income. As documented in the previous studies, the frequency of audit committee meeting is important in keeping the members abreast of

Table 6.6

The Effect of Specific Corporate Governance Variables on the Value Relevance of Other Comprehensive Income (n=327)

Variable		Model 1 Audit Committee Independence				Model 2 Audit Committee Financial Expertise				Model 3 Audit Committee Size			
	Sign	Coef.	Std Error	t	VIF	Coef.	Std Error	t	VIF	Coef.	Std Error	t	VIF
CONS	+/-	-3.56	1.03	-3.45***	-	-3.47	1.02	-3.38***	-	-3.92	1.13	-3.48***	-
BVE_S_{it}	+	0.67	0.17	3.77***	1.14	0.70	0.17	4.21***	1.13	0.65	0.17	3.90***	1.14
NI_Sit	+	0.70	0.10	7.05***	1.76	0.70	0.10	7.12***	1.76	0.71	0.10	7.15***	1.81
OCI_S_{it}	+	0.32	0.07	4.48***	1.21	0.33	0.07	4.46***	1.21	0.32	0.07	4.57***	1.21
$GOVELEM_{it}$	?	0.07	0.30	0.24	2.07	-0.73	0.87	-0.84	1.05	0.03	0.11	0.27	1.08
OCI_S^* $GOVELEM_{it\ it}$	+	0.07	0.05	1.29	2.08	0.26	0.13	0.26	1.05	0.20	0.10	2.09**	1.07
LNI_{it}	-	0.01	0.11	0.07	1.22	-0.01	0.10	-1.61	1.22	0.02	0.11	0.17	1.23
$LOCI_{it}$	-	0.02	0.12	0.16	1.04	0.03	0.12	0.10	1.05	0.04	0.12	0.31	1.04
$LNI^*NI\_S_{it}$	-	0.12	0.12	0.91	1.02	0.05	0.12	2.22**	1.06	0.14	0.13	1.21	1.05
$LOCI^*OCI\_S_{it}$	-	0.05	0.09	0.61	1.13	0.03	0.09	0.39	1.13	0.04	0.09	0.52	1.14
$FSIZE_{it}$	+	0.14	0.04	3.98***	1.15	0.15	0.04	3.57***	1.13	0.16	0.04	3.67***	1.16
IND_{it}	+	0.00	0.00	1.11	1.04	0.00	0.00	1.09	1.04	-0.00	0.00	1.34	1.04
$FLIB_{it}$	+	0.14	0.03	3.61***	1.66	0.13	0.03	3.74***	1.64	0.14	0.03	3.97***	1.64
F-statistics				13.87***				14.27***				14.11***	
No of observations		327				327				327			
R^2		34.65%				35.29%				35.04%			
Mean VIF					1.38				1.21				1.22

Notes: Model 1 to Model 3 present the interaction effect of audit committee independence, audit committee expertise and audit committee size. BVE_S_{it} = per share book value of common equity; NI_S_{it} = net income per share; OCI_S_{it} = other comprehensive income per share; GOVELEMit = the score of individual governance variable; $OCI\_S^*GOVELEM_{it}$ = the interaction between OCI_S and audit committee independence (ACIND); audit committee financial expertise (ACEXP) and Audit committee size (ACSIZE) measured by the number of directors sitting on the audit committee. LNI_{it} and $LOCI_{it}$ are indicator variables which equal 1 if earnings is negative and 0 if otherwise; $LNI^*NI\_S_{it}$ and $LOCI^*OCI\_S_{it}$ are interaction terms for loss firms and *i* and *t* refer to firm and year. *, **, and ***denote significance at the 10%, 5%, and 1% levels respectively.

Table 6.6 (continued)

The Effect of Specific Corporate Governance Variables on the Value Relevance of Aggregate Other Comprehensive Income (n=327)

Variable		Model 4 Audit Committee Meeting				Model 5 Auditor's Reputation(Big4)				Model 6 Internal Control Effectiveness			
	Sign	Coef.	Std error	t	VIF	Coef.	Std error	t	VIF	Coef.	Std error	t	VIF
CONS	+/-	-3.81	1.04	-3.67***	-	-3.46	1.06	1.07***	-	-3.47	1.09	-3.18***	-
BVE_S_{it}	+	0.69	0.17	4.16***	1.13	0.60	0.11	3.57***	1.17	0.63	0.17	3.78***	1.15
NI_S_{it}	+	0.72	0.10	7.19***	1.78	0.67	0.10	6.78***	1.78	0.72	0.10	6.69***	1.77
OCI_S_{it}	+	0.30	0.07	4.26***	1.23	0.24	0.08	3.15***	1.45	0.33	0.07	7.29***	1.20
$GOVELEM_{it}$		0.07	0.09	0.78	1.10	0.01	0.29	0.05	1.05	-0.40	0.32	-1.26	1.05
$OCI\_S*GOVELEM_{it}$	+	0.25	0.12	2.04**	1.06	0.29	0.11	2.65***	1.34	2.15	0.88	2.45**	1.08
LNI_{it}	-	0.02	0.10	0.22	1.22	-0.02	0.11	-0.19	1.24	0.01	0.10	0.08	1.22
$LOCI_{it}$	-	0.01	0.12	0.09	1.05	0.02	0.12	0.13	1.05	0.05	0.12	0.39	1.04
$LNI*NI\_S_{it}$	-	-0.11	0.13	0.84	1.02	0.14	0.12	1.13	1.03	0.17	0.13	1.29	1.05
$LOCI*OCI\_S_{it}$	-	0.05	0.09	0.62	1.13	0.03	0.09	0.29	1.14	0.03	0.09	0.39	1.13
$FSIZE_{it}$	+	0.15	0.03	3.42***	1.19	0.13	0.04	3.59***	1.13	0.16	0.04	3.78***	1.14
IND_{it}	+	0.00	0.00	1.36	1.04	0.00	0.00	1.02	1.05	0.00	0.00	1.17	1.05
$FLIB_{it}$	+	0.14	0.04	3.91***	1.63	0.10	0.03	3.87***	1.63	0.14	0.03	-3.98***	1.63
F-statistics				14.12***				14.44***				11.44***	
No of observations		327				327				327			
R^2		25.05%				35.56%				35.57%			
Mean VIF					1.21				1.25				1.21

Notes: Model 4 to Model 6 present the interaction effect of audit committee meeting, auditor's reputation and no material internal control weakness. BVE_S_{it} = per share book value of common equity; NI_S_{it} = net income per share; OCI_S_{it} = other comprehensive income per share; $GOVELEM_{it}$ = the score of individual governance variable; $OCI\_S*GOVELEM_{it}$ = the interaction between OCI_S and the frequency of annual audit committee meetings (ACMET); auditor's reputation (AUDR) assigned the value of 1 if Big4 and 0 if otherwise and an indicator of whether the firm has not disclosed any material control weakness (NMICW). LNI_{it} and $LOCI_{it}$ are indicator variables that equal 1 if earnings are negative and 0 if otherwise; $LNI*NI\_S_{it}$ and $LOCI*OCI\_S_{it}$ are interaction terms for loss firms and *i* and *t* refer to firm and year. *, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.

the relevant financial reporting and current audit issues (Goodwin-Stewart & Kent, 2006; Yasin & Nelson, 2012). To further highlight the importance of the audit committee meeting, regulators, among others, expressed diligence of the audit committee as a function of the number of audit committee meetings because it is critical in fulfilling their audit committee oversight function (Yasin & Nelson, 2012).

Another element of corporate governance included in the BCGSCORE is the external auditor type. Model 5 presents the result of the interaction between external auditor type and other comprehensive income. The coefficient of the interaction term (OCIS_S*AUDR) was positive and statistically significant at 1 percent. This finding concurs with Song et al. (2010), Lee and Lee (2011), Francis and Michas (2013) and Lee and Park (2013) who investigated the role of an auditor's reputation in reducing the subjectivity of fair value measurement. Because Big_4 audit firms possess vast professional and technical skills and have reputations at stake, they have stronger incentives for ensuring that financial statements reflect the true and fair view to maintain public trust on reporting entities. Thus, external auditor's involvement in the operation of Nigerian capital market could play a broader role in limiting the opportunistic behaviour of the managers in manipulating accounting amounts and consequently reducing agency costs and increasing the reliability of earnings.

Further, the result presented in last model suggests positive and significant interaction (OCI_S*NMICW) between no material internal control weakness and other comprehensive income. This finding is in line with Brown et al. (2014). Information about no material internal control weakness signal the soundness of the sample firms internal control systems, which is a typical condition for detecting and preventing

aggressive financial reporting (Ashbaugh-Skaife et al. 2008; Brown et al., 2014). An effective internal control system could curtail management's forecasts and estimates so that they do not lead to the misrepresentation of the financial statement (Gordon et al. 2006; Ashbaugh-Skaife et al. 2008). As documented in the previous studies, this study affirmed that a high-quality internal control system was negatively associated with intentional manipulation and estimation errors, suggesting an incremental value relevance of other comprehensive income when conditioned for no material internal control weakness.

Overall, four of the six corporate governance measures (audit committee meetings, audit committee size, auditor's reputation and no material internal control weaknesses) continued to support the enhanced reliability of other comprehensive income. Because fair value inputs are less verifiable by investors and prone to greater management estimation errors as well as intentional manipulation, market participants may perceive other comprehensive income of firms with strong corporate governance firms to be more value relevant. Thus, H_{3b}, which hypothesised that individual elements of corporate governance positively influences the reliability of other comprehensive income in the Nigerian capital market, is also accepted.

6.5 Regression Analysis on the Fair Value Hierarchy and the Effect of Corporate Governance Mechanisms

H_{4a} tests the implications of valuation theory and agency theory. The first issue relates to valuation theory, which is interpreted as the variation across hierarchy levels of measurement. The second issue, which tests agency theory, is concerned with the influence of corporate governance mechanisms on the fair value hierarchy level of measurement. To verify these theories based on the implications hypothesised in H_{4a},

Equation 15 and 16, a modified Ohlson (1995) model as implemented in Song et al. (2010), Goh et al. (2015) and Siekkinen (2016) was used. Components of other comprehensive income were partitioned based on the fair value hierarchy (Level 1 to Level 3). Because other comprehensive income is fair value earnings, which are prone to higher management estimation error and greater managerial manipulation, reliability of fair value hierarchy could decrease when descending from Level 1 towards Level 3. This implies that the coefficient of hierarchy level using quoted prices in active markets is likely to be highly priced as compared to observable (Level 2) and unobservable (Level 3) inputs from an investor's point of view. If investors attach less reliability to Level 3 and perhaps Level 2 fair value gains and losses, the regression coefficient on these fair values could be lower than the fair value gains and losses based on active market prices.

6.5.1 Model Specification Test for Hierarchy Level Measurement

The model specification test for the value relevance of fair value hierarchy level regression is presented in Table 6.7. The _hat values, which are the predicted value of the models, are significant as expected. Likewise, the _hatsq are insignificant suggesting that the models are correctly specified. Thus, estimating SP as a function of the book value of equity, net income and other information (corporate governance interacted with fair value earnings based on hierarchy level measurement) is appropriate in testing the value relevance of earnings and the effect of fair value hierarchy information.

Table 6.7
Model Specification Test for Fair Value Hierarchy

Models	Link Test	_hat	_hatsq
Eq. 15	P-value	0.000***	0.732
Eq.16	P-value	0.000***	0.460

Note: The results of the link test showing no specification bias in estimating the book value of equity, net income and fair value hierarchy earnings as predictors of share prices. _hat, which denotes a variable of prediction is expected to be significant. _hatsq, which is the variable of squared prediction is expected to be insignificant.

6.5.2 Findings and Discussions on the Fair Value Hierarchy and Effect of Corporate Governance Mechanism on Fair Value Hierarchy Levels

Table 6.8 Panel A shows regression coefficients of fair value hierarchy levels and are interpreted as a direct test of investors perceived reliability of fair value earnings. The regression coefficients of FVAL1_S and FVAL2_S were positive and significant at 1 and 5 percent respectively based on the values of 0.05 (t= 4.18, p< 0.000) and 0.06 (t= 2.19, p< 0.029). Based on these coefficients, this result suggests that fair value measured at the Level 3 (FVAL3_S) was not positively priced in the Nigerian market as compared to FVAL1_S and FVAL2_S. The insignificance of FVAL3_S in explaining share price could be a result of reliability trade-off arising from subjectivity in measuring certain fair value assets. This finding supports valuation theory when viewing investors to be rational decision makers. This result indicates that fair value gains and losses measured at Level 3 (FVAL3_S) are more likely to be discounted by the investors in equity valuation and hence less reliable when compared to Level 1 and Level 2 hierarchy.

Somewhat surprisingly, the fair value coefficient for FVAL2_S is greater than FVAL1_S. This suggests that investors are willing to pay higher for Level 2 fair value gains and losses than Level 1. As presented above, FVAL3_S was not value relevant, which is consistent with the decreasing reliability of fair value gains and losses when

fair value hierarchy descend from Level 1 to Level 3. One possible explanation for this result may be that investors in the NSE market believe that firms might be producing unreliable fair value estimates in an opportunistic manner and thus do not attach importance to Level 3 fair value gains and losses. Explicitly, fair value gains and losses determined using quoted prices in an active market and observable input were greater in terms of their value relevance compared to unobservable input. Given.

Table 6.8

The Value Relevance of Fair Value Hierarchy Levels and *Effect of Corporate Governance on the Value Relevance of Fair Value Hierarchy* (n=327).

Variable	Panel A Valuation of Fair Value Hierarchy				Panel B Effect of BCGRANK on Fair Value Hierarchy			
	Coef.	Std Error	t	VIF	Coef.	Std Error	t	VIF
CONS	0.36	0.09	4.06***		3.11	1.04	3.00***	-
BVE_S_{it}	0.24	0.11	2.16**	1.93	0.26	0.12	2.15**	2.21
NI_S_{it}	0.30	0.13	2.25**	1.85	0.28	0.14	2.03***	1.98
$FVAL1\_S_{it}$	0.05	0.01	4.18***	1.09	0.03	0.12	2.06**	1.25
$FVAL2\_S_{it}$	0.06	0.03	2.19**	1.48	0.06	0.03	2.19**	1.59
$FVAL3\_S_{it}$	0.12	0.12	0.97	1.15	0.10	0.12	0.84	1.19
LNI_{it}	-0.09	0.06	-1.42	1.01	-0.07	0.07	-1.05	1.05
$LNI*NI\_S_{it}$	0.01	0.07	0.15	1.02	-0.06	0.08	-0.72	1.04
$RANK_{it}$					0.45	0.44	1.02	1.06
$FVAL1\_S* RANK_{it}$					0.21	0.25	0.83	1.03
$FVAL2\_S* RANK_{it}$					0.06	0.03	2.22**	1.07
$FVAL3\_S* RANK_{it}$					0.48	0.23	2.06**	1.10
$FSIZE_{it}$					0.14	0.04	3.57***	1.14
IND_{it}					0.003	0.01	0.42	1.11
$FLIB_{it}$					0.68	0.39	1.78**	1.11
F-statistics			11.76***				7.24***	
Observations	327				327			
R^2	21.38%				29.85%			
Mean VIF			1.36					1.28

Notes: Panel A: provides the regression result of the fair value hierarchy levels. BVE_S_{it} = per share the book value of common equity; NI_S_{it}= net income per share; FVAL1, FVAL2 and FVAL3 denote Level 1 to 3 fair value measures.

Panel B: provides the effect of BCGSCORE on the valuation of the fair value hierarchy of FVAL1 to FVAL3.
*, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.

the fact that this study clustered gain and losses on other components of comprehensive income into fair value hierarchy levels, the result clearly showed that fair value hierarchy greatly determine investors' pricing of gains and losses arising

from dirty surplus in the NSE market. The results presented in Panel A of Table 6.8 is not surprising considering issues of creative accounting practices and relatively weak enforcement of accounting regulations in the NSE market as Ajayi (2006), NASB (2010), ROSC (2011) and Okaro et al. (2013) expressed. These issues suggest information asymmetry between managers and investors and have generated a low level of trust for the published accounting numbers (Ajayi, 2006; ROSC, 2011; Okaro et al., 2013). Arguably, fair value hierarchy has provided a direct means of assessing the reliability of fair value gains and losses in the NSE market. Thus, the irrelevance of FVAL3_S suggests that investors are discounting fair value estimates purely based on management discretion due to concern for low reliability. Therefore, H_{4a}, which hypothesised that reliability of other comprehensive income items decreases when fair value hierarchy descends from Level 1 towards Level 3 in the Nigerian market is accepted.

Similar findings about the decreasing reliability of gains and losses on other comprehensive income items when fair value hierarchy descends from Level 1 towards Level 3 have been reported by previous studies. Song et al. (2010), Kolev (2010) and Lu and Mande (2014) revealed that the value relevance of fair value of Level 1 and Level 2 were greater than that of Level 3 fair values. Song et al. (2010) added that investors place less weight on Level 3 fair value assets relative to Levels 1 and 2, and the value relevance of Level 2 was driven by the fineness of disclosures of Level 2 measurements and the frequency of Level 2 measurements (Lu & Mande, 2014). An extension of Song et al. (2010) by Goh et al. (2015) confirmed the superiority of Level 1 and Level 2 over Level 3 fair value assets. Siekkinen (2016) showed that only Level 1 was value relevant in a weak investor protection

environment. Consistent with H_{4a}, these studies supported the intuition of decreasing reliability when fair value hierarchy descend from Level 1 towards Level 3.

A further test of the reliability of fair value hierarchy is its interaction with corporate governance mechanisms. Even though managers may, in some instances, use their private information to credibly report fair values, they may opportunistically, manipulate fair value earnings for-self benefits (Bartov et al., 2007; Song et al., 2010; Lee & Park, 2013). Corporate governance mechanisms can play a vital role in ameliorating the information asymmetry issues inherent in Level 3 and perhaps Level 2 fair value measures that may reduce agency costs and hence, improve the decreasing reliability when fair value hierarchy descends from Level 1 towards Level 3.

Table 6.8, Panel B presents the result of estimating Equation 16. The coefficients on FVAL1_S, FVAL2_S and FVAL3_S are interpreted as a direct test of reliability of fair value assets in isolation of corporate governance mechanism. The regression coefficients of interaction terms highlight the incremental value relevance of the fair value hierarchy when moving from strong governance practice to weaker governance practices. The regression coefficient on FVAL1_S and FVAL2_S were significantly positive at 5 percent based on values of 0.03 ($t = 2.06$, $p < 0.040$) and 0.06 ($t= 2.19$, $p < 0.029$), whereas FVAL3_S was not significant. Even after including RANK of corporate governance practices and the interaction terms, results of direct relationship suggest that only FVAL1_S and FVAL2 were value relevant in the NSE market similar to the result presented on the Panel A.

Furthermore, the coefficient of interaction term on FVAL1_S*RANK was positive, but not statistically significant. Expectedly, FVAL2_S*RANK and FVAL3_S*RANK were positive and statistically significant at 5 percent. This result revealed that, the impact of corporate governance mechanisms was more recognised on fair value measurement that employs observable and unobservable inputs, where management discretion plays a role. Again, the coefficient on FVAL3_S*RANK was larger than without interaction and greater than FVAL2_S*RANK. This suggests that the impact of corporate governance was more on less reliable fair value hierarchy (FVAL3_S). In absolute terms, the sum of the coefficient of the non-interaction terms for FVAL2_S and FVAL3_S and with those of the interaction terms FVAL2_S*RANK and FVAL3_S*RANK indicate the impact of corporate governance on the valuation of fair value hierarchy. For firms with strong governance mechanisms, FVAL2_S increased from 0.06 to 0.12 (sum of $\beta_4 + \beta_9$), and FVAL3_S also increased from 0.05 to 0.58 (sum of $\beta_5 + \beta_{10}$).

The evidence of less impact of corporate governance on Level 1 fair value gains and losses in the NSE market demonstrates that fair value estimates using quoted prices represent trustworthy gains and losses to investors because they are rarely manipulated. Despite the antecedent of creative accounting practices in the NSE market, managerial manipulation that often affects the reliability of fair value estimates does not pose a threat to quoted prices. From an investor's point of view, Level 1 hierarchy produced the most reliable fair value gains and losses regardless of firms' corporate governance practices. Thus, in the NSE market, investors are not discounting Level 1 fair value gains and losses when evaluating the quality of fair value gains and losses arising from dirty surplus flows. Similar finding of no impact

of corporate governance mechanisms on the Level 1 fair value hierarchy for firms in the United States was documented by Song et al. (2010).

The findings presented in this section highlighted the impact of corporate governance practices on the reliability of Level 2 and Level 3 fair value gains and losses.This finding is not surprising considering issues of financial reporting scandals (Ajay, 2006; Okaro et al., 2013), limited disclosure of accounting information and weak corporate governance practices (NASB, 2010, ROSC, 2011) in the NSE reporting environment. The adoption of IFRS that mandated reporting of other comprehensive income items may not necessarily lead to a more transparent reporting system, particularly for mark-to-model fair-value determination. However, other conversion efforts such as the review of corporate governance frameworks in 2011 provide assurance on the reliability of mark-to-model fair value earnings (FVAL2 and FVAL3) in the NSE market. Thus, the strength of corporate governance mechanisms is essential in ameliorating reliability concerns regarding the decreasing reliability of fair value gains and losses when moving from less subjective to more subjective fair value estimates as Lee and Park (2013) documented.

Therefore, this study does not reject H_{4b} which hypothesised that the decrease in the reliability of other comprehensive income items when fair value hierarchy descend from Level 1 towards Level 3 is influenced by the corporate governance mechanism in the Nigerian market. Similar findings with regard to the increase in the reliability of Level 2 and Level 3 given corporate governance mechanisms was documented by Song et al. (2010). Lee and Park (2013) posited that the influence of auditor reputation was more on a more subjective fair value earnings. In a cross-country study

involving two African countries (Ghana and Kenya), Siekkinen (2016) highlighted that investors from countries with a strong investor protection attached equal value to all fair value hierarchy, but Level 3 was valued less compared to Level 1 and Level 2 by investors in countries with a medium investor protection. Only Level 1 was value relevant for countries with a weak investor protection such as Ghana and Kenya due loss of trust in the fair value estimates made by the firms; and thus investors demand a risk premium for investing in firms with Level 3 fair value assets.

One major implication of this finding is that the reliability of a more subjective cluster fair value hierarchy increases with the level of the strength of corporate governance mechanisms. This current study extends the research of Song et al. (2010), Goh et al. (2015) and Siekkinen (2016) that mostly focused on fair value gains and losses on financial instruments assets and liabilities. The finding presented in this section is robust to use of multiple components of other comprehensive income (gains and losses on available-for-sale marketable securities, revaluation of non-current assets and actuarial gains and losses) clustered based on hierarchy levels.

6.6 Regression Analysis on the Value relevance of Compliance and its Effects on the Value Relevance of Components of Other Comprehensive Income

The implication of valuation theory and agency theory are tested in this section on the assumption that investors priced firm level compliance (valuation theory). To the extent that investors price the level of compliance, companies will take advantage by differentiating themselves through incurring the necessary high information costs to comply with the best practice, which in turn reduce agency costs of information

asymmetry. The following table presents the result of model specification test for equation 17 and 18 testing H_{5a} and $H_{5b.}$

6.6.1 Test for Model Specification

The result of model specification test based on the link test is presented in Table 6.9. The _hat values, which are the predicted value of the models, are significant were expected. Likewise, the _hatsq are insignificant suggesting that the models are correctly specified. Thus, estimating SP as a function of the book value of equity, earnings and other information (compliance related disclosures) is appropriate in testing the value relevance of earnings and the effect of compliance on the reliability of other comprehensive income items.

Table 6.9
Model Specification Test for Compliance Estimation

Models	Link Test	_hat	_hatsq
Eq. 17	P-value	0.000***	0.529
Eq.18	P-value	0.000***	0.119

Note: The link test, showing no specification bias in estimating book value of equity, net income, other comprehensive income items and compliance with IAS 16, IAS 19 and IRS 7 as predictors of share prices. _hat, which denotes a variable of prediction is expected to be significant. _hatsq, which is the variable of squared prediction is expected to be insignificant.

6.6.2 Findings and Discussion on the Value Relevance of Compliance Disclosure

Table 6.10 presents the pooled OLS result when the model is run in its modified form without including other information. From Panel A, the coefficients of BVE_S, NI_S, REV_S and PEN_S for the pooled data were positive and statistically significant and the R^2 of the model was 30.54 percent. However, the inclusion of the overall COMPL score (other information) as a proxy for the perceived reliability leads to a little

increase in the coefficients of the parameters and statistical significance. Consistent with expectations, an increase in the R^2 was achieved (increase to 34.43 percent). The coefficient of the COMPL score was positive and significant at 5 percent, suggesting that COMPL was positively priced in the Nigerian market. Firm level characteristics such as auditor reputation, debt ratio, and industry classification substantially affects the degree of disclosures.

This result demonstrated that beyond accounting numbers, nonfinancial disclosures accompanying the fundamentals of firms do convey relevant information to investors. This finding provides strong evidence on valuation implication of COMPL with relevant accounting standards in gauging the reliability of components of other comprehensive income. This position is similar to the conclusion reached in prior studies on the importance of disclosure in determining the quality of accounting information (Hodgdon et al., 2008; Leuz & Wysocki, 2008; Hassan et al., 2009; Tsalavoutas, 2009).

Nevertheless, even if the overall COMPL was suggestive of enhanced reliability of other components of comprehensive income in the NSE market, it is important to highlight that vast majority of the disclosure items required by IFRS were not disclosed. This position can be supported by the low overall mean COMPL of 57 percent and low means when disclosure was explored standard by standard. When taken standard by standard, low means were documented for compliance relating to

Table 6.10
Value Relevance of Firm Level Compliance for 2012 to 2015

Variable		Panel A: Valuation of Fair Value			Panel B: Valuation of COMPL		
	Sign	Coef.	Robust Error	VIF	Coef.	Robust Error	VIF
CONS	+/-	1.31 (1.21)	1.09	-	1.93 (2.01**)	0.96	-
BVE_S_{it}	+	0.51 (2.46**)	0.21	1.24	0.88 (3.20***)	0.28	1.24
NI_S_{it}	+	0.26 (3.17***)	0.00	1.28	0.25 (3.12***)	0.08	1.25
REV_S_{it}	+	0.24 (3.31***)	0.07	1.19	0.25 (3.52***)	0.07	1.14
SEC_S_{it}	+	-0.03 (-0.32)	0.10	1.05	0.02 (0.16)	0.11	1.05
PEN_S_{it}	+	0.19 (1.80*)	0.10	1.22	0.48 (1.18)	0.41	1.14
LNI_{it}	-	-0.03 (-0.46)	0.06	1.05	-0.05 (-0.73)	0.06	1.06
$LNI*NI\_S_{it}$	-	-0.08 (-1.53)	0.06	1.03	-0.11 (-1.87*)	0.06	1.05
$COMPL_{it}$	+	-	-	-	0.69 (2.01**)	0.34	1.09
$FSIZE_{it}$	+	0.02 (0.65)	0.02	1.05	0.02 (0.74)	0.02	1.05
IND_{it}	+	0.0001 (2.35**)	0.00	1.05	0.01 (2.37**)	0.06	1.06
$DEBT_{it}$	+	-0.09 (-2.15**)	-0.06	1.03	-0.09 (-2.37**)	0.04	1.03
$AUDR_{it}$	+	0.71 (4.88***)	0.15	1.54	0.70 (4.76***)	0.15	1.30
F-statistics		9.48***			9.34***		
Observations		259			259		
R^2		30.54%			34.43%		
Mean VIF				1.17			1.12

Notes: Panel A provides the regression result of the components of other comprehensive income. Panel B provides the valuation effect of $COMPL_{it}$. BVE_{it} = per share the book value of common equity; NI_{it}= net income per share; REV_S_{it} = per share changes in revaluation surplus; SEC_S_{it} = per share changes in gains and losses on re-measuring available-for-sale financial assets; PEN_S_{it} = per share actuarial gains and losses on defined benefit plans. Control variables includes $FSIZE_{it}$ = is the log of market capitalization; IND_{it} = SIC code; $DEBT_{it}$ = ratio of total asset to total debt and $AUDR_{it}$ = auditor's reputation assigned the value of 1 Big4 and 0 if otherwise; and *i* and *t* refer to firm and year. ***,** *, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.

IAS 16 (Revaluation of Property, Plant and Equipment) with 60 percent, IAS 19 (Employee Benefits) with 58 percent and IFRS 7 (Financial instruments: Disclosures) with 53 percent. Standard relating to fair value of financial instruments was identified as the most problematic for reporting entities as Mısırlıoğlu et al. (2013) had documented for Turkish listed companies. Thus, the evidence of low COMPL for Nigerian listed firms confirms reporting incentives problems, limited disclosure of accounting information and weak enforcement documented by NASB (2010) and ROSC (2011).

Nonetheless, because firms differ with respect to skills or resources to cope with the new set of accounting standards, the valuation difference between low and high compliance firms was explored. Following Tsalavoutas (2009) and Hussainey and Walker (2009), the median value of the COMPL score is the point of sample partitioning for low and high COMPL firms. This approach is essential to the objective of the present analyses as it implies that substantially different levels of information reaching investors. This could also serve as a basis for distinguishing firms that differentiate themselves by providing quality disclosure to demonstrate compliance with best practice (Maines & Wahlen, 2006).

Table 6.11 presents the result of data partitioning between low and high COMPL firms. Similar to the results of the full sample, the coefficients of the book value of equity and net income were positive and significant for the two cases. When the data was analysed for the sample of low and high COMPL firms, the components of other comprehensive income were not significantly priced for the two cases except for REV of high COMPL firms presented in Panel B. Interestingly, the coefficient of COMPL for the sample of high compliance firms was positive and significant at 1 percent, whereas the coefficient for low COMPL firms was not significant suggesting low reliability based on compliance. Additionally, the R^2 of the model for high COMPL firms presented in Panel B was 38.79 percent, reasonably greater than 31.20 percent for low COMPL firms presented in Panel A as documented in previous studies (Tsalavotas, 2009).

Table 6.11

Valuation Differences Between High and Low Compliance Firms for 2012 to2014

Variable		Panel A: Low COMPL Firms			Panel B: High COMPL Firms		
	Sign	Coef.	Robust Error	VIF	Coef.	Robust Error	VIF
CONS	+/-	-3.16 (-2.35**)	1.34	-	2.98 (2.38**)	1.25	-
BVE_S_{it}	+	0.59 (2.64**)	0.23	1.24	0.90 (1.75*)	0.50	1.24
NI_S_{it}	+	0.42 (4.68***)	0.09	1.28	0.25 (2.86***)	0.09	1.25
REV_S_{it}	+	0.06 (0.61)	0.09	1.19	0.37 (4.54***)	0.08	1.14
SEC_S_{it}	+	0.01 (0.14)	0.09	1.05	0.04 (0.41)	0.10	1.05
PEN_S_{it}	+	-0.700 (-0.70)	0.99	1.22	0.42 (1.02)	0.41	1.14
LNI_{it}	-	0.04 (0.29)	0.13	1.05	-0.08 (-1.09)	0.08	1.06
$LNI*NI\_S_{it}$	-	-0.15 (-1.68*)	0.09	1.03	-0.08 (-1.02)	0.08	1.05
$COMPL_{it}$	+	0.54 (1.43)	0.38	1.07	0.93 (2.58***)	0.36	1.09
$FSIZE_{it}$	+	-0.09 (-1.92*)	0.05	1.05	0.05 (1.52)	0.03	1.05
IND_{it}	+	0.08 (0.99)	0.09	1.05	0.11 (1.46)	0.08	1.06
$DEBT_{it}$	+	-0.03 (-0.44)	-0.07	1.03	-0.13 (-2.86**)	0.05	1.03
$AUDR_{it}$	+	0.31 (1.58)	0.19	1.54	0.64 (4.05***)	0.16	1.30
F-statistics		6.12***			9.49***		
Observations		72			187		
R^2		31.20%			38.79%		
Mean VIF				1.17			1.12
Cramer's Z-test					-1.59 (0.056)		

Notes: Table 6.11 provides the regression result on the difference between low and high COMPL. Panel A delineates the result of low COMPL firms whereas Panel B presents the result of high compliance firms. $COMPL_{it}$ denotes disclosure score for the two sample firms. BVE_{it} = per share the book value of common equity; NI_{it}= net income per share; REV_S_{it} = per share changes in revaluation surplus; SEC_S_{it} = per share changes in gains and losses on re-measuring available-for-sale financial assets; PEN_S_{it} = per share actuarial gains and losses on defined benefit plans. Control variables includes $FSIZE_{it}$ = is the log of market capitalization; IND_{it} = industry classification code; $DEBT_{it}$ = ratio of total asset to total debt and $AUDR_{it}$ = auditor's reputation is assigned the value of 1 for Big4 firms and 0 if otherwise; and *i* and *t* refer to firm and year.

*, **, and ***denote significance at the 10%, 5%, and 1% levels respectively.

The differences in regression between the two sub-sample firms indicate differences in the perceived reliability between low and high COMPL firms. The Cramer's Z-test of difference between the two sub-samples was statistically significant at 10 percent based on the Z score of -1.59 (0.056). The implication for this result is that the level of compliance with accounting regulation is important in assessing the quality of

accounting fundamentals. Theoretically, a case can made that an increased level of disclosure has positive valuation implications and can reduce the agency costs of information asymmetry (Maines & Wahlen, 2006; Hodgdon et al., 2008). Because several creative accounting practices have taken place in Nigerian as a result of the low disclosures (NASB, 2010; ROSC, 2011), this finding is essentially relevant in the Nigerian market. Accordingly, improving the COMPL level will imply a more transparent financial reporting process, reduced agency cost and hence more value reliable accounting fundamentals. Thus, H_{5b}, which hypothesised that compliance with IAS 16, IAS 19 and IFRS 7 enhance reliability in the Nigeria market was fully supported.

6.6.4 Findings and Discussion on the How Compliance affect the Reliability of Components of Other Comprehensive Income

Given the fact other comprehensive income correlates with the extent of accounting disclosure, this section tests the interaction effect of COMPL with relevant accounting standards. Table 6.12 presents the result of three years pooled regression of components of other comprehensive income. The F-statistic of the model was 9.73 and significant at 1 percent indicating that the model was well specified. The R^2 of 37.71 percent is satisfactory and similar to previous compliance studies (Street & Bryant, 2000; Street & Gray, 2001). The NI_S for the period was positive and significant at 1 percent. The regression coefficients on the fair value gain and losses from REV_S and PEN_S were positive, but PEN_S was not statistically significant given information on the disclosure level of individual items of comprehensive income. The regression coefficient on SEC_S was negative, but not statistically significant.

More interestingly, the results of the interaction term between REV_S*COMPL and PEN_S*COMPL continued to be positive and statistically significant. In absolute terms, the coefficient of REV_S*COMPL and PEN_S*COMPL were greater than without interactions. This result demonstrates that components of other comprehensive income provided value relevant information in explaining share prices when COMPL with relevant accounting standards were disclosed in the financial statements. To the extent that COMPL with relevant accounting standards relating to other comprehensive income addresses reliability concerns regarding the choice of valuation method for fair value determination, investors are more likely to view components of other comprehensive income as reliable

As evidenced in Goncharov et al. (2006), when non-compliance costs are negligible, firms that incur high information costs to provide quality information are recognised as "good and responsible" and consequently are rewarded by investors. Similar attribution is likely for Nigeria given the low level of disclosure in the Nigerian reporting environment and the disparity between the NG-GAAP and IFRS framework (NASB, 2010; ROSC, 2011). The IFRS reporting framework has more accounting policy choices, which are inconsistent with NG-GAAP such as more disclosure requirements and differences in application and interpretation are possible reasons that could make investors recognise COMPL with relevant accounting standards when assessing the reliability of reported earnings. As such, this study fails to reject H5b, which hypothesised that compliance with IAS 16, IAS 19 and IFRS 7 significantly influence the value relevance of other components of comprehensive income in the Nigerian market.

Table 6.12

The Impact of Compliance on the Value Relevance of Components of Other Comprehensive Income (n=*259*)

Variable	Sign	Coef.	Robust Error	t	P-value	VIF
CONS	+/-	0.75	0.64	1.17	0.242	-
BVE_S_{it}	+	0.88	0.24	3.73	0.000	1.26
NI_S_{it}	+	0.22	0.08	2.83	0.005	1.30
REV_S_{it}	+	0.26	0.07	3.77	0.000	1.19
SEC_S_{it}	+	0.06	0.10	0.61	0.542	1.06
PEN_S_{it}	+	0.50	0.39	1.30	0.194	1.22
$COMPL_{it}$	+	0.73	0.28	2.64	0.009	1.07
$REV\_S*REVCOMPL_{it}$	+	0.58	0.17	3.36	0.001	1.06
$SEC\_S*SECCOMPL_{it}$	+	-0.01	0.07	-0.16	0.874	1.04
$PEN\_S*PENCOMPL_{it}$	+	0.11	0.06	1.96	0.051	1.04
LNI_{it}	-	-0.06	0.06	-0.98	0.326	1.07
$LNI*NI\_S_{it}$	-	-0.12	0.06	-2.07	0.040	1.07
$FSIZE_{it}$	+	0.02	0.02	0.72	0.470	1.04
IND_{it}	+	0.002	0.00	2.49	0.013	1.28
$DEBT_{it}$	+	-0.11	-0.04	-2.78	0.006	1.05
$AUDR_{it}$	+	0.73	0.15	4.92	0.000	1.52
F-statistics		9.73			0.000	
Observations		259				
R^2		37.71%		Mean VIF		1.15

Notes: Table 6.12 provides the regression result for the interaction effect of COMPL on the value relevance of components of other comprehensive income. COMPL denotes disclosure score for the sample firms; BVE_{it} = per share the book value of common equity; NI_{it}= net income per share; REV_S_{it} = per share gains and loss on non-current asset; SEC_S_{it} = per share changes in gains and losses on re-measuring available-for-sale financial assets; PEN_S_{it} = per share actuarial gains and losses on defined benefit plans. $REV\_S*REVCOMPL_{it}$ = interaction of per share gains and loss on non-current asset and level of $REVCOMPL_i$; $SEC\_S*SECCOMPL_{it}$ = interaction of per share changes in gains and losses on re-measuring available-for-sale financial assets and level of $SECCOMPL_{it}$; $PEN\_S*PENCOMPL_{it}$ = interaction of per share actuarial gains and losses on defined benefit plans and level of $PENCOMPL_{it}$. Control variables includes $FSIZE_{it}$ = is the log of market capitalization; IND_{it} = industry classification; $DEBT_{it}$ = ratio of total asset to total debt and $AUDR_{it}$ = auditor's reputation assigned the value of 1 Big4 and 0 if otherwise; and *i* and *t* refer to firm and year.

*, **, and *** denotes significant at the 10%, 5%, and 1% levels respectively.

Overall, findings regarding objective five underscores the importance of COMPL with the reporting requirements of IAS 16, IAS 19 and IFRS 7. The present finding corroborates prior literature regarding the positive valuation effect of COMPL (Hodgdon et al., 2009; Hussainey & Walker, 2009; Mısırlıoğlu et al., 2013). Important points to note here are that: 1) COPML is positively priced in the Nigeria

market, 2) there is a significance difference in the perceived reliability between low and high COMPL firms, and 3) COMPL does affect investors' reliability of the components of other comprehensive income in Nigerian market.

6.7 Robustness Test

In testing H_3 to H_5, pooled data involving different years and unit observations were used (unbalanced panel). Residuals across years and units could be correlated (Petersen, 2009; Woodridge, 2013). The test for firm fixed effect and time effect indicated an unobserved firm fixed effects for estimation testing H_3 to H_5. A corrective measure for standard errors and related t-statistics on one dimension (OLS standard errors, clustered at the firm level), which provides less-biased standard errors was used to re-estimates models 14 to 18. This approach is similar to Song et al. (2010), Goncharov and Hodgson (2011) and Mechelli and Cimini (2014). The direction of coefficients and the significance level of the models clustered at the firm level was qualitatively similar to the basic models of the interacting effect of corporate governance mechanism, fair value hierarchy information and compliance with relevant accounting requirement (Appendix G to I).

6.8 Summary

This chapter addresses three important aspects regarding reliability concerns about fair value earnings. Explicitly, the chapter examined the impact of corporate governance mechanisms, information on the hierarchy of fair value measurement and compliance with related accounting standards on the value relevance of other comprehensive income and its components.

Specifically, the results presented in Section 6.4.2 indicate that the value relevance of other comprehensive income varies with the strength of a firm's corporate governance. This suggests that investors place different weights on the other comprehensive income based on the strength of corporate governance mechanism. For firms with a weak governance mechanism, other comprehensive income was value relevant, but the variable was more significantly value relevant for strong governance firms. For high governance firms, the valuations of other comprehensive income increased towards 1. The results of six individual governance measures also continued to support the greater influence of governance practices on valuation of other comprehensive income. The positive and significant interaction term was interpreted to mean that effective corporate governance curtails information asymmetry and mitigates estimation errors or induced measurement bias, especially Level 3 and perhaps Level 2 measurement where information asymmetry is expected to be the highest.

The results in Section 6.5.2 indicate that the Level 1 fair value was negative, even when interacted with the corporate governance factor score. Level 2 and Level 3 fair values were significantly associated with SP for the entire sample. The valuation of Level 2 and Level 3 increased towards 1, which indicated a positive impact of the corporate governance mechanism on the investors pricing of Level 2 and Level 3 fair value measures. Furthermore, the findings demonstrated strong evidence that corporate governance had the greatest impact on valuation of more subjective and less reliable Level 3 fair value. This implies that corporate governance mechanisms serve as a strong weapon for resolving reliability concerns regarding management estimation errors and managerial manipulation of Level 3 and perhaps Level 2 fair

value measures. Overall, this study concludes that investors are more likely to view observable and unobservable input for strong governance firms as value relevant.

Section 6.6.2 presents findings on the valuation effect of compliance with relevant accounting standards. The results of the three-years pooled regression confirmed that the components of other comprehensive income were positively priced except for the fair value of available-for-sale financial assets. Evidence also suggests that other comprehensive income of high compliance firms was more positively valued as compared to low compliance firms. Therefore, disclosure of relevant accounting standards regarding fair value calculation improves the value relevance of other comprehensive income in the Nigerian market.

For all estimations, a robustness test was performed to ensure that findings documented were not sensitive to the unobserved firm fixed effect. For all equations estimated in this section, the results were qualitatively similar to those of the main model.

CHAPTER SEVEN

SUMMARY, CONCLUSION, AND LIMITATIONS

7.0 Introduction

The evolving complexity in size and operations of businesses, corporate governance reforms and ever-changing financial reporting requirements has made scrutiny of financial report a routine task. This need reinforces the understanding of the concept of relevance and reliability of accounting numbers internationally since the seminal work of Ball and Brown (1968). Thus, stock exchanges all over the world require audited financial statements to be prepared to inform existing and potential investors and other stakeholders for making economic decisions and to enhance the overall capital market efficiency (IASB, 2010). In the United States and the United Kingdom and other developed markets, a good number of studies have examined the importance of comprehensive income and its components for firm valuation but so far, evidence is still equivocal.

This study adds a new perspective to the on-going argument of relative and the incremental value relevance of comprehensive income and its components from a country (Nigeria) that recently switched over to the IFRS accounting framework. As an extension of what is already known in the literature, this current study fills in some gaps by providing empirical evidence on the effect of: 1) corporate governance mechanisms, 2) fair value hierarchy information and 3) compliance with relevant accounting standards on the value relevance of other comprehensive income and its components. This thesis documented that these factors (measuring reliability) significantly influenced the investors pricing of other comprehensive income and its components in the Nigerian market.

7.1 Overview of the Thesis

This thesis presents empirical evidence on two important aspects of comprehensive income reporting in Nigeria: 1) the relative and incremental value relevance of comprehensive income and its components and 2) the effects of reliability factors on the value relevance of other comprehensive income and its components. As a background of the study, Chapter One highlights the importance of market value of equities for firm's valuation. Chapter One also explains the objectives, scope, significance and structure of the thesis. Chapter Two presents an overview of the Nigerian capital market and financial reporting framework. The chapter also highlights the similarities and differences between NG-GAAP and IFRS as well as related literature on the value relevance of comprehensive income and reliability factors.

Furthermore, the theoretical background and development of hypotheses are explained in Chapter Three. Chapter Four discusses research methods used in this study and analyses of the findings on the relative and the incremental value relevance are presented in Chapter Five. Chapter Six presents the findings regarding the effect of reliability factors (corporate governance mechanisms, fair value hierarchy information and the level of compliance with IFRS) on the value relevance of other comprehensive income and its components. Chapter Seven concludes this thesis by giving an overview of the work, summarises the findings, discusses the contributions, highlights some caveats of the study, and finally provided suggestions for future research.

7.2 Summary of the Findings

The five objectives addressed in this thesis are grouped into two main objectives. First, the study examined the relative value relevance of net income and comprehensive income, and the incremental value relevance of other comprehensive income and its components. Second, the study investigates the effect of corporate governance mechanisms, fair value hierarchy and the level of compliance as reliability factors influencing the value relevance of other comprehensive income and its components. The findings on these two main objectives are presented in the following subsections.

7.2.1 Findings on the Relative and the Incremental Value Relevance of Comprehensive Income and its Components

This section summarizes the findings of the first main issue that focuses on whether net income dominates comprehensive income, and whether other comprehensive income and its components provide incremental information beyond the net income in the Nigerian market. In support of valuation theory, findings based on the sample of financial and nonfinancial firms demonstrate that the traditional net income and comprehensive income were value relevant on an individual basis, but the dominance of net income over the comprehensive income was documented. This finding is striking given the three benchmarks employed in comparing the relative difference between the two financial performance indicators.

In the first benchmark, the regression coefficient on net income was greater than comprehensive income using the price-earnings and return-earning relationships for both financial and nonfinancial firms. In the second methodology (R^2), the magnitudes of the coefficient of determination for the net income models for both

price-earnings and return-earning relationship for a sample financial and nonfinancial firms were larger than those of the comprehensive income. The third benchmark that employed the Vuong test of differences between competing models suggests that net income dominates comprehensive income using the price-earnings relationship for a sample of nonfinancial firms. The Vuong's Z-statistic using the return-earning relationship or nonfinancial firms and price-earnings and return-earning relationship for a sample financial were all positive, but not statistically significant. The positive Z-statistic value indicates that net income is a better explanatory variable of share prices and stock returns (Vuong, 1989).

A confirmatory test was performed using Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC). In all respects, the results were consistent with Vuong Z-statistic test supporting the dominance of the net income over the comprehensive income. Overall, superiority of net income over the comprehensive income hypothesised (H_{1a}) for Nigerian listed firms was supported. Dhaliwal et al. (1999) documented similar results for a sample of the firms in the United States, Wang et al. (2006) for Dutch firms, and Brimble and Hodgson (2008), Goncharov and Hodgson (2011) and Mechelli and Cimini (2014) for European firms. H_{1b} explored the difference in the value relevance of comprehensive income between voluntary and mandatory regimes and the result of Cramer' s Z-test was only significant for nonfinancial firms, and hence H_{1b} was partially accepted. This finding revealed that the introduction of IAS 1, which specifically focuses on the presentation of dirty surplus flows, have increased the value relevance of comprehensive income for a sample of nonfinancial firms.

Second, this thesis documents a mixed result regarding the incremental value relevance of other comprehensive income relative to the traditional net income. For the two subsamples of firms, other comprehensive income deflated by the outstanding share was positive and significantly associated with SP. On the other hand, other comprehensive income scaled by the beginning price of equity was positive for the two classifications, but was only significant for financial firms. Based on the first benchmark of the incremental value relevance assessment, the regression coefficient of other comprehensive income was greater than zero. This finding, on average, indicates that other comprehensive income reflects value relevant information to investors. On the second benchmark, the magnitude of the regression coefficient on other comprehensive income using the two baseline regressions for the two subsamples was lower than the net income as predicted by H_{2a}. Overall, these results provide a strong indication that both net income and other comprehensive income were positively priced in the Nigerian market, but other comprehensive income was continuously lower than the net income as documented in Goncharov and Hodgson (2011) and Mechelli and Cimini (2014). Hence, H_{2a} was accepted.

Relating to the valuation implication hypothesised in H_{2b}, this study documents mixed results on the incremental value relevance of the components of other comprehensive income as discussed below:

1. 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. 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).

2) 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.

3) Next, actuarial gains and losses were consistently positive, but not significant for all estimations. The exception is PEN_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).

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 (see Table 5.19). 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. Thus, H_{2b} was partially accepted.

H_{2c} hypothesis posited that the value relevance of other comprehensive income in the mandatory comprehensive income reporting regime was greater than when it was voluntary. The Cramer's Z-test of the difference was statistically significant for both financial and nonfinancial firms, and hence H_{2c} was not rejected. A similar conclusion was reached by Fasan, Fiori and Venice (2014) for continental Europe. They observed an increase in the value relevance of other comprehensive income in the mandatory regime. (post-IAS/IFRS in 2005 and IAS 1 Revised in 2009). Likewise, Marchinia and D'Este (2015) highlighted that the extensive use of the historical cost accounting model by Italian firms made other comprehensive income (a fair value earnings) more value relevant.

7.2.2 Findings on the Impact of Reliability Factors on the Value Relevance of Other Comprehensive Income and its Components

On the second main issue, this thesis examined the impacts of corporate governance mechanisms, the fair value hierarchy information and the level of compliance as a test of reliability factors on the value relevance of other comprehensive income and its components

First, because other comprehensive income is derived from different dirty surplus flows and some items measured based on unobservable inputs, potentials arises for both intrinsic estimation errors and intentional manipulations. As a test of reliability, a

factor score of corporate governance variables[1] was interacted with other comprehensive income. Interestingly, the coefficient of interaction term was positive and statistically significant. Again, the sum of the coefficient of non-interaction term with that of the interaction term was positive and statistically significant. This finding demonstrates that the corporate governance mechanism influence the quality of other comprehensive income in the NSE market. This finding holds for sample partitioned for high and low corporate governance, suggesting that other comprehensive income of strong corporate governance could be perceived to me more reliable than those of the low governance companies. The finding supported the valuation implication and reduced agency cost predicted by H_{3a}. Similar conclusion on the effectiveness of corporate governance and competence of independent monitors in enhancing the reliability of fair value earnings have been reached (Penman, 2007; Song et al., 2010; Lee & Park, 2013).

For completeness, the six governance measures were interacted with other comprehensive income. The result indicates that audit committee meetings, audit committee size, auditor's reputation and no material internal control weaknesses continue to support the overall impact of corporate governance mechanism. Thus, H_{3b}, which hypothesised that individual elements of corporate governance positively influence the reliability of other comprehensive income in the Nigerian capital market is also accepted. Overall, this thesis provides a strong indication that the strength of corporate governance mechanisms could address the reliability concern associated with fair value earnings as documented in the previous studies (Song et al., 2010; Lopes & Walker, 2012; Lee & Park, 2013).

[1] Factor score reliability comprised audit committee independence, audit committee financial expertise, audit committee meetings, audit committee size, auditor's reputation and disclosure of no material internal control weakness on investors pricing of other comprehensive income.

Second, prior to the IFRS framework on fair value hierarchy information, direct tests of reliability were almost impossible (Song et al., 2010). Following Song et al. (2010), this thesis provides direct evidence of reliability of more reliable measure (Level 1), middle ground reliability (Level 2) and less reliable (Level 3) accounting earnings. Estimates based on unobservable input often raise reliability concern due to high level of managerial discretion, which force investors to discount the weights they attach to the Level 3 fair value measurements (Maines & Wahlen 2006; Song et al., 2010; Lee & Park, 2013' Goh et al., 2015).

The result documented in this thesis reveals that FVAL1 (Level 1) and FLVA2 (Level 2) were positive and significant. A fair value hierarchy based on Level 3 was positive, but not statistically significant for the sample examined. A more interesting result is the interactions of these level earnings and the corporate governance measures. The result of the interaction of Level 1 with the corporate governance mechanism was not significant, which indicated less impact of the corporate governance on the Level 1 fair value as Song et al. (2010) documented. The result of the interaction of Level 2 and Level 3 fair value with the corporate governance mechanism were positive and statistically significant. However, the impact was more on the Level 3 measures. Overall, this finding indicates that the strength of the corporate governance mechanism can ameliorate the reliability concern associated with Level 3 and perhaps Level 2 measures, which can be interpreted as reduced agency cost similar to Song et al. (2010) and Lee and Park (2013). Thus, no evidence was found to reject H_{4a} and H_{4b}.

Lastly, it has been documented that disclosure of compliance with relevant accounting requirements enhanced the reliability of accounting information for investors (Street

& Bryant, 2000; Street & Gray, 2001; Hodgdon et al., 2008). As a test of reliability, the thesis documented that the regression coefficient on the fair value of non-current assets and pension liabilities are positively priced for high compliance firms, but not for low compliance firms. This result underscores the importance of compliance with the reporting requirements relating to IAS 16, IAS 19 and IFRS 7. It was, therefore, concluded that fair value gains and losses of firms that disclosed relevant information are perceived to be more reliable. This result is striking given the significant Cramer's (1989) Z-test of difference between low and high compliance firms. Overall, this study fails to reject H_{5a} on the value relevance of compliance with relevant accounting disclosure requirements relating to IAS 16, IAS 19 and IFRS 7. H_{5a} explored the influence of disclosure relating to IAS 16, IAS 19 and IFRS 7 on the components of other comprehensive income. The findings indicate the influence of compliance on the components of other comprehensive income, particularly fair value gains and losses on non-current assets and actuarial gains and losses. To the extent that compliance with accounting standards relating to other comprehensive income addresses reliability concerns regarding fair value determination, investors are more likely to view components of other comprehensive income as reliable.

7.3 Contributions

As highlighted in Chapter One, the current study offers five main contributions. To the best of researcher's knowledge, this study is the first documented study on the value relevance and the perceived reliability of other comprehensive income and its components in Nigerian market.

First, this study documented the Nigerian perspective on the ongoing argument on the relative value relevance difference between the traditional net income and

comprehensive income. The findings of this study based on the sample of financial and non-financial firms indicate that each summary measure reflects value relevant information to investors. However, traditional net income is more value relevant than comprehensive income in the Nigerian capital market. This finding extends understanding beyond what was previously documented on the contextual importance of the net income and the comprehensive income in equity valuation.

Second, prior to 2012, reporting entities in the NSE market were not under any obligation to report other comprehensive income and its components. This implies that, in the pre-adoption period, some important earnings arbitrarily eluded disclosure on the face of the primary financial statement and little effort was made to highlight their importance to investors. From a Nigerian perspective, this thesis contributes to and documents initial evidence on the value relevance of other comprehensive income and its components. This effort demonstrates a shift toward highlighting the importance of fair value earnings as against the previous historical examination of the book value of equity and earnings per share (Mgbame & Ikhatua, 2013; Olugbenga & Atanda, 2014; Enofe et al., 2014; Ernest & Oscar, 2014).

Third, one of the unique contributions of this thesis is establishing the influence of corporate governance mechanisms on the value relevance of other comprehensive income. Because other comprehensive income is the sum of fair value items measured at different fair value hierarchy information, such earnings number is like to suffer information asymmetry problem due questionable reliability associated with Level 3 and perhaps Level 2 measures. The information asymmetry could be greater in reporting environment like Nigeria, where doubt has been cast on reported accounting numbers. This study has documented that corporate governance mechanism enhances

the reliability of other comprehensive income in the Nigerian market. Moreover, some individual governance measures continue to support the overall impact of corporate governance mechanism. To the best of the researcher's knowledge, no previous study has examined the effect of the combine and individual effect of corporate governance variables on the value relevance of other comprehensive income.

Fourth, another contribution of this thesis is expanding the understanding of the effect of fair value hierarchy information on the value relevance of comprehensive income items. Previously, Song et al., (2010) used only financial assets and liabilities for hierarchy classification, and Lee and Park (2013) employed perceived degree of subjectivity to classify items of comprehensive income. By classifying fair value gains and losses on the revaluation of non-current asset, available-for-sale financial assets and actuarial gains and losses based actual annual reported information, this thesis extends Song et al. (2010) and Lee and Park (2010). Examining the value relevance of these levels measurements, this study provides some fresh insight as follows,

Level 1 (FVAL1) was positively priced in the Nigerian market. This result shows that investors viewed fair value gains and losses that utilized quoted prices in active markets to be reliable and need less of corporate governance mechanisms. Level 2 (FVAL2) that potentially represents the middle ground reliability is positively priced for both low and strong governance firms. Nevertheless, the value relevance of FVAL2 was enhanced given the strength of firm's corporate governance mechanism. Consistent with decreasing reliability as fair value hierarchy became less verifiable, Level 3 (FVAL3) was not positively priced for both weak and strong governance firms, suggesting low reliability. Interestingly, the impact of corporate governance

was more on FVAL3 compared to FVAL2. As such, a need exists to increase enforcement of best governance practice as it is likely to mitigate questionable reliability of fair value measurement, especially for Level 3 where the severity of information asymmetry is expected to be greater.

Fifth, while much has been done on the value relevance and earnings managements inherent in comprehensive income reporting, the aspect of "compliance" with IAS 16 (fair value gains and losses on revaluation of non-current assets); IAS 19 (actuarial gains and losses on defined benefit plans) and IFRS 7 (fair value gains and losses on available-for-sale financial assets) is scant in the literature. This study provides some initial evidence on the effect of compliance on these fair value earnings. This thesis documented that fair value gains and losses on non-current assets and actuarial gains and losses seem more reliable when conditioned for level of compliance. Thus, compliance with relevant standards could determinant of reliability of fair value earnings.

7.4 Limitations

This study is subject to some caveats and fair interpretation of the findings documented herein are better appreciated by understanding these shortcomings. First, the findings documented in this thesis are limited to the sample firms with nonzero other comprehensive income between 2010 to 2014. Given the fact that mandatory comprehensive income reporting is still in the infant stage and the study period covered immediately after a major financial crisis. Inclusion of more years as data roll in and the market becomes more vibrant may change the results documented herein over time. Because this thesis examines something relatively new in Nigeria, the imposed condition of at least one item of comprehensive suggests that the study

focuses on firms with unequal traditional net income and comprehensive income; hence it is pertinent to recognised sample limitation.

Second, direct observation and measurement of reliability has remained an arduous task. However, a good number of studies have employed non-financial information often used by the investors to assess the quality of accounting numbers as proxy reliability (Maines & Wahlen, 2006; Song et al. 2013, Lee & Park, 2013). In this study, the assessment of reliability (corporate governance mechanisms, compliance level and fair value hierarchy information) uses non-financial information disclosed in the financial statement. Thus, argument can be made that, if corporate governance provides monitoring and bonding mechanisms, which mitigate estimation errors, reporting biases and reducing information asymmetry, the reliability of fair value accounting numbers could be examined similar to previous studies (Bhat, 2009; Song et al., 2010; Lopes & Walker, 2012; Lee & Park, 2013).

Likewise, one can also make a case that because compliance with the requirements of accounting standards reduces information asymmetry signals adherence to best practices and enhances investors' ability to review fair value earnings, the reliability of comprehensive income could be examined (Best & Braam, 2013). Seemingly, the enactment of IFRS 7 on disclosure of fair value measurements provides a more direct test of the reliability of fair value earnings. Nevertheless, it is not devoid of criticism that such an approach could not precisely measure reliability as compared to experimental method (Maines & McDaniel, 2000; Maines & Wahlen, 2006).

7.5 Recommendations for Future Research

The results documented in this thesis reveal several aspects of the value relevance of comprehensive income as a measure of the alternative financial performance indicator relative to the traditional net income. Given that the coverage of this study immediately proceeded the period of economic crisis, it is difficult to draw strong conclusions on the value relevance of the components of comprehensive income, particularly fair value gains and losses on available-for-sale financial assets and actuarial gains and losses. Undoubtedly, this area of research, as more data rolls in, appears to be promising for future research.

Second, evidence presented in this thesis relates to the value relevance in terms of quality of comprehensive income and its components relative to traditional net income. It is also suggested that the importance of components of other comprehensive income can be gauged by investigating other information dimensions such as persistence and predictive relevance. Future research is recommended to explore these issues in Nigeria.

Third, it is suggested that investors' assessment of the relevance of accounting numbers is influenced by factors underlying the reliability of its measurements, and investors often substitute reliability for relevance. Therefore, future studies could investigate whether users' purposefully place different weights on fair value earnings based on the strength of corporate governance, a firm's level of compliance and fair value hierarchy information. Research techniques employing experimental economics methodology, interviews and case studies might more directly test the implications of these reliability factors. Future research is desired to investigate these potentials.

While corporate governance variables used to proxy reliability in this study are more related to the audit function, future research is encouraged to examine the effect of more corporate governance variables as well as institutional factors to expand the understanding of reliability of other comprehensive income and its components. The control variables included in the analyses suggest some form of importance of firm-specific characteristics on the value relevance of other comprehensive income. A promising research direction is to provide some insights on the possible determinants of comprehensive income disclosure, especially in Nigeria.

7.6 Concluding Remarks

In this section, the major conclusions, contributions, limitations and the recommendation for future research are discussed. This study examines the relative value relevance of comprehensive income and net income, and the effect of corporate governance mechanisms, fair value hierarchy information and level of compliance as reliability tests of other comprehensive income and its components. Overall, it can be said that reporting comprehensive income in Nigeria is a welcome development as it provides an alternative financial performance indicator for equity valuation. Effective and efficient corporate governance practice, information on fair value hierarchy and disclosure of accounting standards relating to the components of other comprehensive income are critical in shaping the usefulness of comprehensive income reporting in Nigeria.

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APPENDIX A: SUMMARY OF VARIABLES MEASUREMENTS

Appendix A

Summary of Variables Measurements

Notations	Measurements	Previous Scholars
Dependent Variables		
SP	Share prices of a company *i* four months after the end of the financial year *t.*	Barth et al. (2008), Tsalavoutas et al. (2012), Barth et al. (2012) and Lee and Park (2013).
RET	The cumulative annual stock return commencing eight months before and ending four months after a fiscal year.	Dhaliwal et al. (1999), Barth et al. (2012) and Lee and Park (2013).
Independent Variables		
BVE	Book value of equity is measured as the book value of common equity at the end of the fiscal year t deflated by the number of outstanding shares consistent..	Cahan et al. (2000), Kanagaretnam et al. (2009), and Mechelli and Cimini (2014).
NI	Net income after tax per share of company i deflated by the total outstanding shares and market price for price and return model at end of the financial year.	Cahan et al. (2000), Kanagaretnam et al. (2009), and Mechelli and Cimini (2014).
CI	Net income plus other comprehensive income components per share of firm i deflated by total outstanding shares and market price for price and return model at end of the financial year t.	Dhaliwal et al. (1999), Cahan et al. (2000), and Mechelli and Cimini (2014).
OCI	Denotes the sum of items of other comprehensive income per share of firm i deflated by total outstanding shares in the price model and beginning market price in the return model at the end of the financial year t. (items included are i, ii & iii).	Dhaliwal et al. (1999) Cahan et al. (2000), Wang et al. (2006), and Mechilli and Cimim (2014).
i. REV	Fair value gains and losses on non-current assets	Barth & Clinch (1998), Dhaliwal et al. (1999), Cahan et al. (2000) and ; Hlaing & Pourjalali 2012
ii. SEC	Gains and losses on available-for-sale financial securities.	Barth and Clinch (1998); Cahan et al. (2000) and Kanagaretnam et al. (2009),
iii. PEN	Actuarial gains and losses on defined benefit plan.	Dhaliwal et al. (1999), Mitra and Hossain (2009), and Jones and Smith (2011).

Note: Item i, ii and iii are measured as fair value gains and losses of firm i deflated by total outstanding shares in the price model and beginning market price in the return model at th of the financial year t.

Appendix A (continued)

Notations	Measurement	Previous Scholars
Interacting variable		
Corporate Governance Variables		
ACIND	Audit committee independence, it is coded 1 if 51% or above AC members are independent directors and 0 otherwise	Rainsbury et al. (2009), Suárez et al (2013) and Woidtke and Yeh (2013).
ACSIZE	Audit committee size, a value of 1 is given for firms' with minimum of three members and 0 if less than three as required by CAMA 1990 and similar to previous studies (Xie et al., 2003).	Xie et al.(2003) and Zhang, Zhou, and Zhou (2007).
ACEXP	Audit committee expertise, it is coded 1 if the AC includes a member of a professional accounting body and 0 otherwise.	Zhang, Zhou, and Zhou (2007) and Rainsbury et al. (2009).
ACMET	Audit committee meetings, a value of 1 if the committee meets at least four times in a financial year as required by KPMG (2011) and CAMA (1990) and 0 otherwise.	Barua et al. (2010), Yasin and Nelson (2012) and Woidtke and Yeh (2013).
AUDR	Auditor's reputation, is a dummy variable coded 1 for firms audited by a Big4 and 0 for firms audited by non-Big4.	Song et al. (2010), Lee and Park (2013) and Mironiuca and Carp (2014).
NMICW	No material internal control weakness: an indicator variable given the value of 1 if a firm has not disclosed any material internal control weakness and 0 otherwise	Song et al. (2010) and Brown et al. (2014).
BCGSCORE	A composite measure of corporate governance mechanism using principal components analysis. PCA.The score is obtained by taking the average score from Audit committee Size (ACSIZE), AC Independence (ACIND), AC Expertise (ACEXP) and AC Meetings (ACMET), Auditor's Reputation (AUDR) and No material Control Weakness (NMICW).	Habib and Azim (2008), Song et al. (2010). Anandarajan and Hasan (2010) and Sheu & Lee 2012).

Appendix A (continued)

Notations	*Measurements*	Previous Scholars
Fair Value hierarchy information Measurement		
Fair value gains and losses RFA, AVFS and PENA	The variables are classified based on hierarchy level of measurement. Level 1 is valuation based on quoted prices in the active market; Level 2 measurements is based on the observable input and Level 3 measurements is based on unobservable input as IFRS 7 stipulated.	Song et al. (2010) Lee and Park (2013) and Lu and Mande (2014).
Level of Compliance with IFRS		
IAS 16, IAS 19 and IFRS 7	Cooke (1989) dichotomous approach for measuring compliance with disclosure requirements was used. The approach used unweighted disclosure index where "compliance is calculated as the ratio of the total items disclosed to the maximum possible score applicable for that company"	Cooke (1989); Street and Bryant (2000), Street and Gray (2001) and Glaum and Street (2003) and Hodgdon et al. (2008).
Control Variables		
FSIZE	Firm size, natural log of market capitalization of company i at end of the financial year t.	Chen and Jaggi (2000), Leventis and Weetman (2004)
LEV	Firm leverage, measured as total long-term debt per total assets of a firm during a financial year.	Habib (2008), Anandarajan and Hasan (2010) and Choi et al. (2011).
INDUS	Industry variable was coded using NSE industry classification code for Agriculture, Construction, Conglomerate, Consumer Goods, Healthcare, Industrial Goods, Oil and Gas and Services	
FLIB	Foreign Liberalization, is measured as the percentage of shares of firm i own by foreign companies.	Hasan and Marton (2003), Boubakri et al (2005) and Anandarajan and Hasan (2010).

APPENDIX B: CHECK LIST COMPLIANCE

Appendix B

The Disclosure Check List for Used for this Study

Panel A: Compliance with IAS 16:Property, Plant and Equipment

Paragraph	**Presentation/disclosure requirement**	
	This section of the checklist addresses the presentation and disclosure requirements relating to IAS 16 that prescribes the accounting treatment for property, plant and equipment.	
IAS 16:74	The financial statements shall also disclose:	
	a) the existence and amounts of restrictions on title, and property, plant and equipment pledged as security for liabilities	
	b) the amount of expenditures recognised in the carrying amount of an item of property, plant and equipment in the course of its construction	
	c) the amount of contractual commitments for the acquisition of property, plant and equipment; and	
	d) if it is not disclosed separately in the statement of comprehensive income, the amount of compensation from third parties for items of property, plant and equipment that were impaired, lost or given up that is included in profit or loss.	
IAS 16:77	**Assets carried at revalued amounts**	
	If the entity carry any class of its property, plant or equipment under the revaluation model.	
	If items of property, plant and equipment are stated at revalued amounts, the following shall be disclosed:	
	a) the effective date of the revaluation;	
	b) whether an independent valuer was involved;	
	c) the methods and significant assumptions applied in estimating the items' fair values;	
	d) the extent to which the items' fair values were determined directly by reference to observable prices in an active market or recent market transactions on arm's length terms or were estimated using other valuation techniques;	
	e) for each revalued class of property, plant and equipment, the carrying amount that would have been recognised had the assets been carried under the cost model; and	
	f) the revaluation surplus, indicating the change for the period and any restrictions on the distribution of the balance to shareholders.	

Notes: compliance score for IAS 16 is maximum of 10 and minimum of 0

Panel B: Compliance with IAS 19:Employee benefits

	Presentation/disclosure requirement	
	Panel B of the checklist addresses the presentation and disclosure requirements of IAS 19, which prescribes the accounting for employee benefits. The issues relate to the determination of employee benefit liabilities, assets and expenses for short-term and long-term employee benefits.	
IAS 19:120A	An entity shall disclose the following information about defined benefit plans:	
	a)	the entity's accounting policy for recognizing actuarial gains and losses;
	b)	a general description of the type of plan
	c)	a reconciliation of opening and closing balances of the present value of the defined benefit obligation showing separately, if applicable, the effects during the period attributable to (i) actuarial gains and losses, (ii) contributions by plan participants, and (iii) benefits paid

ppendix B (continued)		
	d)	an analysis of the defined benefit obligation into amounts arising from plans that are wholly unfunded and amounts arising from plans that are wholly or partly funded;
	e)	a reconciliation of the opening and closing balances of the fair value of plan assets and of the opening and closing balances of any reimbursement right recognised as an asset in accordance with paragraph 104A showing separately, if applicable, the effects during the period attributable to each of the following: (i) expected return on plan assets, (ii) actuarial gains and losses, (iii) foreign currency exchange rate changes on plans measured in a currency different from the entity's presentation currency, (iv) contributions by the employer, (v) contributions by plan participants, (vi) benefits paid, (vii) business combinations and (viii)settlements.;
	f)	a reconciliation of the present value of the defined benefit obligation in (c) and the fair value of the plan assets in (e) to the assets and liabilities recognised in the balance sheet, showing at least: (i) the net actuarial gains or losses not recognised in the balance sheet (see paragraph 92); (ii) the past service cost not recognised in the balance sheet (see paragraph 96); (iii) any amount not recognised as an asset, because of the limit in paragraph 58(b); (iv) the fair value at the balance sheet date of any reimbursement right recognised as an asset in accordance with paragraph 104A (with a brief description of the link between the reimbursement right and the related obligation); and (v) the other amounts recognised in the balance sheet.
	g)	the total expense recognised in profit or loss for each of the following, and the line item(s) in which they are included: (i) current service cost; (ii) interest cost; (iii) expected return on plan assets; (iv) expected return on any reimbursement right recognised as an asset in accordance with paragraph 104A; (v) actuarial gains and losses; (vi) past service cost; (vii) the effect of any curtailment or settlement; and (viii) the effect of the limit in paragraph 58(b).
	h)	the total amount recognised in the statement of recognised income and expense for each of the following: (i) actuarial gains and losses; and (ii) the effect of the limit in paragraph 58(b).
	i)	for entities that recognised actuarial gains and losses in the statement of recognised income and expense in accordance with paragraph 93A, the cumulative amount of actuarial gains and losses recognised in the statement of recognised income and expense.
	j)	for each major category of plan assets (which shall include, but is not limited to, equity instruments, debt instruments, property, and all other assets), the percentage or amount that each major category constitutes of the fair value of the total plan assets.
	k)	the amounts included in the fair value of plan assets for: (i) each category of the entity's own financial instruments; and (ii) any property occupied by, or other assets used by, the entity.
	l)	a narrative description of the basis used to determine the overall expected rate of return on assets, including the effect of the major categories of plan assets.
	m)	the actual return on plan assets, as well as the actual return on any reimbursement right recognised as an asset in accordance with paragraph 104A of IAS 19;
		the amounts included in the fair value of plan assets for:
	n	the principal actuarial assumptions used as at the balance sheet date, including, when applicable: i the discount rates; (ii) the expected rates of return on any plan assets for the periods presented in the financial statements; (iii) the expected rates of return for the periods presented in the financial statements on any reimbursement right recognised as an asset in accordance with paragraph 104A; (iv) the expected rates of salary increases (and of changes in an index or other variable specified in the formal or constructive terms of a plan as the basis for future benefit increases); (v) medical cost trend rates; and (vi) any other material actuarial assumptions used.

Appendix B (continued)		
	o)	the effect of an increase of one percentage point and the effect of a decrease of one percentage point in the assumed medical cost trend rates on: (i) the aggregate of the current service cost and interest cost components of net periodic post–employment medical costs; and (ii) the accumulated post–employment benefit obligation for medical costs. For the purposes of this disclosure, all other assumptions shall be held constant. For plans operating in a high inflation environment, the disclosure shall be the effect of a percentage increase or decrease in the assumed medical cost trend rate of a significance similar to one percentage point in a low inflation environment.
	(p)	the amounts for the current annual period and previous four annual periods of: (i) the present value of the defined benefit obligation, the fair value of the plan assets and the surplus or deficit in the plan; and (ii) the experience adjustments arising on: (A) the plan liabilities expressed either as (1) an amount or (2) a percentage of the plan liabilities at the balance sheet date and (B) the plan assets expressed either as (1) an amount or (2) a percentage of the plan assets at the balance sheet date.
	(q)	the employer's best estimate, as soon as it can reasonably be determined, of contributions expected to be paid to the plan during the annual period beginning after the balance sheet date.
Notes: compliance score for IAS 19 is maximum of 17 and minimum of 0		
Panel C: Compliance with IAS 39: Financial instrument Measurement and Recognition		
	Presentation/disclosure requirement	
	Panel C of the checklist addresses the presentation and disclosure requirements of IAS 39. However, since IAS 39 does not include any presentation or disclosure, disclosure requirement as per IFRS 7 are used.	
IFRS 7:8(d)	a	An entity shall disclose information that enables users of its financial statements to evaluate the significance of financial instruments (available-for-sale financial assets) for its financial position and performance.
IFRS 7:12(b)	b	An entity shall disclose information if reclassification (amount and reason) of a financial asset from one category to another was made during the reporting period in accordance with paragraphs 51 to 54 of IAS 39) and wheather measured at fair value, rather than at cost or amortised cost.
IFRS 7:20(a)	c	The entity shall disclose net gains or net losses on available-for-sale financial assets, showing separately the amount of gain or loss recognised in other comprehensive income during the period and the amount reclassified from equity to profit or loss for the period.
IFRS 7:25	d	For each class of financial assets and financial liabilities, the entity shall disclose the fair value of that class of assets and liabilities in a way that permits it to be compared with its carrying amount.
IFRS 7:27	e	The entity shall disclose for each class of financial instruments the methods and, when a valuation technique is used, the assumptions applied in determining fair values of each class of financial assets or financial liabilities.
IFRS 7:27A	f	For there has been a change in valuation technique, the entity shall disclose that change and the reason for making it.
IFRS 7:27B	g	For fair value measurements recognised in the statement of financial position an entity shall disclose for each class of financial instruments:
IFRS 7:27B(a)	h	the level in the fair value hierarchy into which the fair value measurements are categorised in their entirety, segregating fair value measurements to fair value hierarchy that reflects the significance of the inputs used in making the measurements.
IFRS 7:27B(b)	i	b) any significant transfers between Level 1 and Level 2 of the fair value hierarchy and the reasons for those transfers, separately for: i) transfers into each level; and ii) transfers out of each level.

Appendix B (continued)		
IFRS 7:27B(c)	j	for fair value measurements in Level 3 of the fair value hierarchy, a reconciliation from the beginning balances to the ending balances, disclosing separately changes during the period attributable to the following: i) total gains or losses for the period recognised in profit or loss, and a description of where they are presented in the statement of comprehensive income or the separate income statement (if presented); ii) total gains or losses recognised in other comprehensive income; iii) purchases, sales, issues and settlements (each type of movement disclosed separately); and iv) transfers into or out of Level 3 (e.g. transfers attributable to changes in the observability of market data) and the reasons for those transfers. For significant transfers, transfers into Level 3 shall be disclosed and discussed separately from transfers out of Level 3;
IFRS 7:27B(d)	k	the amount of total gains or losses for the period in (c)(i) above included in profit or loss that are attributable to gains or losses relating to those assets and liabilities held at the end of the reporting period and a description of where those gains or losses are presented in the statement of comprehensive income or the separate income statement (if presented); and
IFRS 7:27B(e)	l	for fair value measurements in Level 3, if changing one or more of the inputs to reasonably possible alternative assumptions would change fair value significantly, the entity shall i) state that fact; ii) is close the effect of those changes; and iii) disclose how the effect of a change to a reasonably possible alternative assumption was calculated.
IFRS 7:28	m	When the market for a financial instrument is not active, does a difference exist between the fair value at initial recognition and the amount that would be determined at that date using a valuation technique (see guidance)?
IFRS 7:30	n	The entity shall disclose information to help users of the financial statements make their own judgements about the extent of possible differences between the carrying amount of those financial assets or financial liabilities and their fair value, including: i) the fact that fair value information has not been disclosed for these instruments because their fair value cannot be measured reliably; ii) a description of the financial instruments, their carrying amount, and an explanation of why fair value cannot be measured reliably; iii) information about the market for the instruments; iv) information about whether and how the entity intends to dispose of the financial instruments; and v) if financial instruments whose fair value previously could not be reliably measured are derecognised, that fact, their carrying amount at the time of derecognition, and the amount of gain or loss recognised.
Notes: compliance score for IAS 39 is maximum of 14 and minimum of 0		

APPENDIX C: DETAILED SECTOR DISTRIBUTION OF NSE MARKET

Appendix C

List of the Companies Examined in this Study

S/N	Name of Companies	S/N	Name of Companies
	Agriculture (4)	33	U T C Nig. Plc
1.	FTN Cocoa Processors Plc	34	Unilever Nigeria Plc
2.	Livestock Feeds Plc	35	Vitafoam Nig Plc
3.	Okomu Oil Palm Plc	36	Vono Products Plc
4.	Presco Plc		**Financial- Banks (18)**
	Conglomerate (5)	37	Access Bank Nig Plc
5.	A.G. Leventis Nigeria Plc	38	CitiBank Nigeria Plc
6.	Chellarams Plc	39	Daimond Bank Nig Plc
7.	John Holt Plc	40	FCMB Bank Nig Plc
8.	SCOA NIG. Plc	41	Fidelity Bank Nig Plc
9.	UAC Plc	42	First Bank Nig Plc
	Construction (6)	43	Guaranty Bank Plc
10.	Arbico Plc	44	Heritage Nigeria Plc
11.	Julius Berger NIG. Plc	45	Key Stone Bank Nigeria Plc
12.	Union Homes Real Estate Investment	46	MainStreet Bank Nigeria Plc
13.	UCAN Property Dev. Co. Limited	47	United Bank of Africa Plc
14.	Skye Shelter Fund Plc	48	Unity Bank PLc
15.	Smart Products Nigeria Plc	49	Union Bank Nig.Plc
	Consumer (21)	50	Sky Bank Nigeria Plc
16	7-UP Bottling Company Plc	51	Stanbi IBTC Nigeria Plc
17	Cadbury Nigeria Plc	53	Standard Chartered Bank Nigeria PLc
18	Champion Breweries Plc	54	Wema Bank Nig Plc
19	Dangote Flour Nig Plc	55	Zenith International Bank Plc
20	Dangote Sugar Nig Plc		**Insurance (14)**
21	Dangote Salt Nig Plc	56	African Alliance Insurance Nig Plc
22	Flour Mills Nig Plc	57	AIICO Insurance Nig Plc
23	Golden Guinea Brew. Nig Plc	58	Continental Insurance Nig Plc
24	Guinness Nig Plc	59	Cornerstone Insurance Nig Plc
25	Honeywell Flour Mill Plc	60	Custodian Insurance Nig Plc
26	International Breweries Plc	61	Equity Ascsuran Nig Plc
27	Nascon Allied Industries Plc	62	Great Nigerian Assurance Plc
28	Nigerian Breweries Nig Plc	63	International Insurance Nig Plc
29	Nigerian Enamelware Nig Plc	64	Leadway Assurance Company Ltd
30	Nigeria. Flour Mills Plc	65	Linkages Insurance Nig Plc
31	Premier Breweries Plc	67	Mansard Insurance Nig Plc
32	PZ Cussons Nigeria Plc	68	Mutual Insurance Nig Plc

Appendix C

List of the Companies Examined in this Study (Continued)

S/N	Name of Companies	S/N	Name of Companies
68	Niger Insurance Nig Plc	92	Paints And Coatings Nig Plc
69	Wapic Insurance Plc	93	Portland Paints Nig Plc
	Investment and Financial Services (4)	94	Premier Paints Plc
70	Union Homes Savings And Loans Plc	95	P S Mandrides & CO Plc
71	NPF Microfinance Bank		**Oil and Gas (7)**
72	Resort Savings & Loans Plc	96	Capital Oil Plc
73	Sim Capital Alliance Value Fund Plc	97	Eterna PLC
	Health (4)	98	Exxo Mobil Oil Nig Plc
74	Evans Medical Nig	99	Forte Oil Plc services Plc
75	Fidson Healthcare Nig Plc	100	Japaul Oil & Maritime Plc
76	Nigeria-German Chemicals Nig Plc	101	MRS Oil Nigeria Plc
77	Glaxo Smithkline Consumer Nig. Plc	102	Oando Nigeria Plc
	Industrial Goods (19)		**Services (15)**
77	African Pants Plc	103	Academy Press Plc
78	Aluminium Extrusion Nig Plc	104	Afromedia Pl
79	Aluminium Manufacturing Company	105	Briscoe Plc
80	Austin Laz & Company Plc	106	C & I Leasing Plc
81	Avocrown Nig Plc	107	Capital Hotels Plc
82	Beger Paints Plc	108	Carvaton Offshore support GRP Plc
83	Beta Glass	109	Chams Plc
84	Curtix Nigeria Plc	110	Computer Warehouse Plc
85	Cement Co. of North.Nig. Plc	111	HIS Nigeria Plc
86	Dangote Cement Nig Plc	112	Ikeja Hotel Plc
87	DN Meyer Plc	113	Learn Africa Plc
88	First Aluminium Nig Plc	114	NCR Nigeria Plc
89	Lafarge Cement Africa Plc	115	Nigerian Airline Services
90	Multi-Trex Integrated foods Plc	116	Red Star Express Plc
91	Multverse Nig Plc	117	University Press Plc

Source: NSE website

APPENDIX D: OLS STANDARD ERRORS CLUSTERED AT THE FIRM LEVEL FOR FINANCIAL AND NONFINANCIAL FIRMS- A SENSITIVITY ANALYSIS

Appendix D

OLS Standard Errors Clustered at the Firm Level (Relative Value Relevance) for Financial Firms.

```
. regress SP BVE_S NI_S LNI LNI_NIS, robust cluster(code)

Linear regression                                       Number of obs =     123
                                                        F(  4,    36) =    4.39
                                                        Prob > F      =  0.0054
                                                        R-squared     =  0.3263
                                                        Root MSE      =  .42298

                                  (Std. Err. adjusted for 37 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .7374166   .3551139     2.08   0.045     .0172123    1.457621
        NI_S |   .3729088   .2202379     1.69   0.099    -.0737544    .8195721
         LNI |  -.0278658   .0283704    -0.98   0.333    -.0854035     .029672
     LNI_NIS |  -.0543161   .0692207    -0.78   0.438    -.1947023    .0860701
       _cons |   .1120795   .0597738     1.88   0.069    -.0091474    .2333063
------------------------------------------------------------------------------


. regress SP BVE_S CI_S LCI LCI_CIS, robust cluster(code)

Linear regression                                       Number of obs =     123
                                                        F(  4,    36) =    3.13
                                                        Prob > F      =  0.0262
                                                        R-squared     =  0.3128
                                                        Root MSE      =  .42723

                                  (Std. Err. adjusted for 37 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |    .821482   .3252554     2.53   0.016     .1618336     1.48113
        CI_S |   .2675519    .107187     2.50   0.017     .0501665    .4849372
         LCI |   .0043045   .0394378     0.11   0.914    -.0756791     .084288
     LCI_CIS |  -.0657704   .0970042    -0.68   0.502     -.262504    .1309632
       _cons |    .085127   .0589695     1.44   0.158    -.0344687    .2047227
------------------------------------------------------------
```

```
. regress RET  NI_MC CNI_MC LNI  LCNI LNI_NIMC LCNI_NIM, robust cluster(code)

Linear regression                                       Number of obs =     110
                                                        F(  6,    35) =    5.89
                                                        Prob > F      =  0.0003
                                                        R-squared     =  0.2390
                                                        Root MSE      =  .61617

                                    (Std. Err. adjusted for 36 clusters in code)
------------------------------------------------------------------------------
             |               Robust
         RET |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       NI_MC |     .60535   .1739564     3.48   0.001     .2521997    .9585003
      CNI_MC |   .0716547   .5733844     0.12   0.901    -1.092377    1.235687
         LNI |  -.0854545   .1899309    -0.45   0.656    -.4710347    .3001258
        LCNI |    .349172   .3362005     1.04   0.306    -.3333514    1.031695
    LNI_NIMC |  -.1028503   .2552191    -0.40   0.689    -.6209726    .4152719
   LCNI_NIMC |   .5550898   .4742466     1.17   0.250    -.4076821    1.517862
       _cons |   .3002033   .1516403     1.98   0.056    -.0076429    .6080494
------------------------------------------------------------------------------
```

OLS Standard Errors Clustered at the Firm Level (Incremental Value Relevance) for Financial Firms.

```
. regress SP BVE_S NI_S OCI_S  LNI LOCI LNI_NIS LOCI_OCIS, robust cluster(code)

Linear regression                                       Number of obs =     123
                                                        F(  7,    36) =    2.70
                                                        Prob > F      =  0.0233
                                                        R-squared     =  0.3656
                                                        Root MSE      =  .41579

                                    (Std. Err. adjusted for 37 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .6211636   .3391393     1.83   0.075    -.0666428     1.30897
        NI_S |   .3924262   .2188413     1.79   0.081    -.0514045    .8362568
       OCI_S |   .3509536   .1224188     2.87   0.007     .1026767    .5992305
         LNI |  -.0341665   .0291242    -1.17   0.248    -.0932332    .0249001
        LOCI |   .0372491   .0335562     1.11   0.274    -.0308061    .1053044
     LNI_NIS |   -.068431   .0709161    -0.96   0.341    -.2122555    .0753934
   LOCI_OCIS |   .1139308   .1130821     1.01   0.320    -.1154103    .3432719
       _cons |   .1158232    .061491     1.88   0.068    -.0088864    .2405327
------------------------------------------------------------------------------
```

```
. regress RET NI_MC CNI_MC OCI_MC LNI LOCI LNI_NIMC LOCI_OCI_MC, robust
cluster(code)

Linear regression                                       Number of obs =     110
                                                        F(  7,    35) =    7.46
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.2836
                                                        Root MSE      =  .60074

                                    (Std. Err. adjusted for 36 clusters in code)
------------------------------------------------------------------------------
             |               Robust
         RET |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       NI_MC |   .5705228   .1719608     3.32   0.002     .2214239    .9196218
      CNI_MC |  -.0640111   .4719126    -0.14   0.893    -1.022045    .8940225
      OCI_MC |   .5901513   .1932122     3.05   0.004     .1979096     .982393
         LNI |  -.0771866   .1837568    -0.42   0.677    -.4502328    .2958596
        LOCI |   .0776055   .0441015     1.76   0.087    -.0119253    .1671363
    LNI_NIMC |  -.0756261   .2429357    -0.31   0.757    -.5688117    .4175595
 LOCI_OCI_MC |  -.0227611   .0538568    -0.42   0.675    -.1320961     .086574
       _cons |   .1811801   .1263991     1.43   0.161    -.0754238    .4377839
------------------------------------------------------------------------------


. regress SP BVE_S NI_S LNI LNI_NIS REV_S SEC_S PEN_S, robust cluster(code)
Linear regression                                       Number of obs =     110
                                                        F(  7,    35) =    4.04
                                                        Prob > F      =  0.0024
                                                        R-squared     =  0.3233
                                                        Root MSE      =  .43423

                                    (Std. Err. adjusted for 36 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .3210017   .1677041     1.91   0.064    -.0194557    .6614591
        NI_S |   .5003483   .2174143     2.30   0.027     .0589738    .9417229
         LNI |  -.0302581   .0299855    -1.01   0.320     -.091132    .0306158
     LNI_NIS |  -.0508567   .0679516    -0.75   0.459    -.1888058    .0870924
       REV_S |   .3159409   .1180027     2.68   0.011     .5554992    .0763826
       SEC_S |  -.1019732    .064641    -1.58   0.124    -.2332015     .029255
       PEN_S |    .118356    .129755     0.91   0.368    -.1450607    .3817727
       _cons |   .2043884   .0681211     3.00   0.005     .0660951    .3426816
------------------------------------------------------------------------------
```

```
. regress RET NI_MC CNI_MC LNI LCNI_NIMC REV_MC PEN_MC SEC_MC, robust
cluster(code)

Linear regression                                       Number of obs =     110
                                                        F(  7,    35) =    5.06
                                                        Prob > F      =  0.0005
                                                        R-squared     =  0.3673
                                                        Root MSE      =  .56458

                                    (Std. Err. adjusted for 36 clusters in code)
------------------------------------------------------------------------------
             |               Robust
         RET |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       NI_MC |   .6487996   .2368256     2.74   0.010     .1680181    1.129581
      CNI_MC |  -.0232109   .5255485    -0.04   0.965    -1.090131    1.043709
         LNI |  -.0107499   .0545858    -0.20   0.845    -.1215649    .1000651
   LCNI_NIMC |   .1204801   .1521929     0.79   0.434     -.188488    .4294482
      REV_MC |   .3870168   .1510804     2.56   0.015     .0803073    .6937263
      PEN_MC |   .1764133   .1002118     1.76   0.087    -.0270274     .379854
      SEC_MC |  -.3125282   .1302437    -2.40   0.022    -.0481194    .5769369
       _cons |   .1977949    .070701     2.80   0.008     .0542643    .3413256
------------------------------------------------------------------------------
```

OLS Standard Errors Clustered at the Firm Level (Relative Value Relevance) for Nonfinancial Firms.

```
.reg SP BVE_S NI_S LNI LNI_NIS, robust cluster(code)

Linear regression                                       Number of obs =     226
                                                        F(  4,    79) =    6.35
                                                        Prob > F      =  0.0002
                                                        R-squared     =  0.2350
                                                        Root MSE      =  2.2643

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .6861752   .2927809     2.34   0.022     .1034094    1.268941
        NI_S |   .5182988   .1715721     3.02   0.003     .1767931    .8598044
         LNI |  -.1433935   .1272821    -1.13   0.263    -.3967422    .1099552
     LNI_NIS |  -.1509744   .0992237    -1.52   0.132    -.3484743    .0465255
       _cons |    .534914   .2638343     2.03   0.046      .009765    1.060063
------------------------------------------------------------------------------
```

```
.regress SP  BVE_S CI_S LCI LCI_CIS, robust cluster(code)

Linear regression                                       Number of obs =     226
                                                        F(  4,    79) =    4.41
                                                        Prob > F      =  0.0028
                                                        R-squared     =  0.1979
                                                        Root MSE      =  2.3185

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .7412035   .2894759     2.56   0.012     .1650162    1.317391
        CI_S |   .3670164   .1545014     2.38   0.020      .059489    .6745439
         LCI |  -.0915781   .1182074    -0.77   0.441     -.326864    .1437078
     LCI_CIS |  -.1100505    .081556    -1.35   0.181    -.2723837    .0522827
       _cons |   .5333521   .2793958     1.91   0.060    -.0227714    1.089476
------------------------------------------------------------------------------

.regress RET NI_MC CNI_MC LNI LNI_NIMC, robust cluster(code)

Linear regression                                       Number of obs =     152
                                                        F(  4,    79) =    9.56
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.1805
                                                        Root MSE      =  1.9757

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
         RET |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       NI_MC |   .6290445   .1369419     4.59   0.000     .3564684    .9016205
      CNI_MC |   .5742195   .4958616     1.16   0.250    -.4127684    1.561207
         LNI |  -.1550484   .1619103    -0.96   0.341    -.4773227    .1672259
    LNI_NIMC |  -.0743013   .0453628    -1.64   0.105    -.1645938    .0159912
       _cons |   1.937907    .224656     8.63   0.000     1.490741    2.385074
------------------------------------------------------------------------------


 .reg RET CI_MC CCI_M LCI  LCI_CIMC, robust cluster(code)

Linear regression                                       Number of obs =     152
                                                        F(  4,    79) =    8.94
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.1576
                                                        Root MSE      =  1.9987

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
         RET |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       CI_MC |   .5752119   .1563624     3.68   0.000     .2639803    .8864435
      CCI_MC |   .5908337   .7842957     0.75   0.453    -.9702679    2.151935
         LCI |  -.4165822   .1252328    -3.33   0.001    -.6658518   -.1673125
    LCI_CIMC |  -.2186443   .0754202    -2.90   0.005    -.3687645   -.0685241
       _cons |   1.973031   .1777573    11.10   0.000     1.619214    2.326848
------------------------------------------------------------------------------
```

OLS Standard Errors Clustered at the Firm Level (Incremental Value Relevance) for Nonfinancial Firms.

```
regress SP BVE_S NI_S OCI_S LNI LOCI LNI_NIS LOCI_OCIS, robust cluster(code)

Linear regression                                       Number of obs =     226
                                                        F(  7,    79) =    6.43
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.2394
                                                        Root MSE      =  2.2732

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .6754711    .297512     2.27   0.026     .0832882    1.267654
        NI_S |   .5043385   .1706825     2.95   0.004     .1646035    .8440736
       OCI_S |   .4716237   .1671767     2.82   0.006     .1388667    .8043806
         LNI |  -.1538357   .1314196    -1.17   0.245    -.4154199    .1077485
        LOCI |   .0354926   .1294961     0.27   0.785     -.222263    .2932481
     LNI_NIS |  -.1525801   .1008783    -1.51   0.134    -.3533733    .0482131
   LOCI_OCIS |   -.023454   .1590223    -0.15   0.883    -.3399799    .2930718
       _cons |   .6004807    .281789     2.13   0.036     .0395937    1.161368
------------------------------------------------------------------------------
```

```
regress RET NI_MC CNI_MC OCI_MC LNI LOCI LNI_NIMC LOCI_OCI_MC, robust
cluster(code)

Linear regression                                       Number of obs =     152
                                                        F(  7,    79) =    5.95
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.1835
                                                        Root MSE      =  1.9924

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
         RET |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       NI_MC |   .6129356   .1376806     4.45   0.000     .3388893     .886982
      CNI_MC |   .6028349    .496768     1.21   0.229    -.3859571    1.591627
      OCI_MC |   .2163627   .6436263     0.34   0.738    -1.064743    1.497469
         LNI |  -.1554867   .1645234    -0.95   0.348    -.4829624    .1719889
        LOCI |   .0237577   .1448128     0.16   0.870    -.2644849    .3120003
    LNI_NIMC |  -.0780675    .047974    -1.63   0.108    -.1735573    .0174223
 LOCI_OCI_MC |   .1143385   .2581427     0.44   0.659    -.3994817    .6281587
       _cons |   1.954247   .2268065     8.62   0.000       1.5028    2.405694
------------------------------------------------------------------------------
```

```
. regress SP BVE_S NI_S  LNI LNI_NIS REV_S SEC_S PEN_S,  robust cluster(code)

Linear regression                                       Number of obs =     226
                                                        F(  7,    79) =    5.52
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.2416
                                                        Root MSE      =    2.27

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |    .665601   .2964612     2.25   0.028     .0755097    1.255692
        NI_S |   .5048492    .172372     2.93   0.004     .1617513    .8479471
         LNI |  -.1651111   .1308059    -1.26   0.211    -.4254737    .0952514
     LNI_NIS |   -.156878   .0977452    -1.60   0.112    -.3514349    .0376788
       REV_S |   .5861194   .2726373     2.15   0.035     -1.12879    .0434485
       SEC_S |  -.3752905   .3023021    -1.24   0.218    -.9770079    .2264269
       PEN_S |  -.6811012   .3410495    -2.00   0.049    -1.359943   -.0022591
       _cons |   .6254707   .2904189     2.15   0.034     .0474063    1.203535
------------------------------------------------------------------------------

.

regress  RET  NI_MC  CNI_MC    LNI  LNI_NIMC  REV_MC  SEC_MC  PEN_MC,  robust
cluster(code)

Linear regression                                       Number of obs =     151
                                                        F(  7,    79) =    6.69
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.1946
                                                        Root MSE      =   1.983

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
         RET |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      NI_MC |   .6280681   .1385891     4.53   0.000     .3522134    .9039228
     CNI_MC |   .6595133   .5173831     1.27   0.206     -.370312    1.689338
         LNI |   -.131726   .1702625    -0.77   0.441     -.470625     .207173
    LNI_NIMC |  -.0778616   .0467685    -1.66   0.100    -.1709519    .0152288
      REV_MC |   .7519027    .690287     1.09   0.279    -.6220793    2.125885
     SEC_MC |  -.6070435   .2758191    -2.20   0.031    -1.156048   -.0580393
     PEN_MC |    .106811   .5458493     0.20   0.845    -.9796749    1.193297
       _cons |   1.958968   .2326404     8.42   0.000     1.495909    2.422027
------------------------------------------------------------------------------
```

APPENDIX E: CONTROLLING FOR FIRM CHARACTERISTICS- A SENSITIVITY ANALYSIS

Appendix E
Controlling for Firm Characteristics for Financial Firms

```
regress SP BVE_S NI_S LNI LNI_NIS IND MCAP AUDR FLIB, robust cluster (code)

Linear regression                                      Number of obs =     123
                                                       F(  8,    36) =    2.64
                                                       Prob > F      =  0.0218
                                                       R-squared     =  0.4019
                                                       Root MSE      =  .40549

                                    (Std. Err. adjusted for 37 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |    .675402   .3066883     2.20   0.034     .0534092    1.297395
        NI_S |   .3829828   .2161727     1.77   0.085    -.0554359    .8214014
         LNI |  -.0332973   .0249552    -1.33   0.190    -.0839089    .0173143
     LNI_NIS |  -.0426692   .0619081    -0.69   0.495    -.1682246    .0828863
         IND |   .0160119   .0555125     0.29   0.775    -.0965726    .1285965
        MCAP |   .0522595   .0265653     1.97   0.057    -.0016175    .1061364
        AUDR |   .3000584   .2914975     1.03   0.310    -.2911259    .8912427
        FLIB |   .5399794    .218038     2.48   0.018     .982181    .0977778
       _cons |  -.8285601   .7296206    -1.14   0.264    -2.308299     .651179
------------------------------------------------------------------------------

. est store modA

. regress SP BVE_S CI_S LCI LCI_CIS IND MCAP AUDR FLIB, robust cluster (code)

Linear regression                                      Number of obs =     123
                                                       F(  8,    36) =    3.17
                                                       Prob > F      =  0.0080
                                                       R-squared     =  0.3835
                                                       Root MSE      =  .41167

                                    (Std. Err. adjusted for 37 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .7709687   .2781507     2.77   0.009     .2068529    1.335084
        CI_S |   .2680215   .0942514     2.84   0.007     .0768708    .4591723
         LCI |   .0041578   .0397863     0.10   0.917    -.0765324    .0848481
     LCI_CIS |  -.0736999   .0889663    -0.83   0.413     -.254132    .1067321
         IND |   .0438876   .0728707     0.60   0.551     -.103901    .1916761
        MCAP |    .056277   .0241757     2.33   0.026     .0072464    .1053076
        AUDR |   .2323697   .2668367     0.87   0.390    -.3088001    .7735396
        FLIB |   .4637531   .2191402     2.12   0.041     .9081899    .0193163
       _cons |  -1.070574   .6742459    -1.59   0.121    -2.438008    .2968602
------------------------------------------------------------------------------

. est store modB

. vuong modA modB
                     Model 1        Model 2
R-Squared             0.4019         0.3835

Vuong Z-Statistic     0.2808
  p-value             0.7789
```

```
. regress SP BVE_S NI_S OCI_S  LNI LOCI LNI_NIS LOCI_OCIS IND MCAP AUDR FLIB,
robust cluster (code)

Linear regression                                       Number of obs =     123
                                                        F( 11,    36) =    2.39
                                                        Prob > F      =  0.0244
                                                        R-squared     =  0.4315
                                                        Root MSE      =  .40062

                                    (Std. Err. adjusted for 37 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .5850905   .2994124     1.95   0.058    -.0221459    1.192327
        NI_S |   .4086465   .2148129     1.90   0.065    -.0270143    .8443072
       OCI_S |    .292769   .1173836     2.49   0.017      .054704     .530834
         LNI |  -.0354928   .0256498    -1.38   0.175     -.087513    .0165275
        LOCI |   .0159932   .0363173     0.44   0.662    -.0576618    .0896481
     LNI_NIS |  -.0572304   .0649109    -0.88   0.384    -.1888757    .0744149
   LOCI_OCIS |   .1148011   .1086817     1.06   0.298    -.1056155    .3352177
         IND |   .0381076   .0521609     0.73   0.470    -.0676796    .1438949
        MCAP |   .0499089   .0271069     1.84   0.074    -.0050665    .1048842
        AUDR |   .2675198   .2772711     0.96   0.341    -.2948122    .8298517
        FLIB |     .56813   .2213243     2.57   0.015    -1.016996    .1192635
       _cons |  -.8339959   .7249946    -1.15   0.258    -2.304353    .6363612
------------------------------------------------------------------------------
```

Controlling for Firm Characteristics for Nonfinancial Firms

```
.regress SP BVE_S NI_S LNI LNI_NIS IND MCAP AUDR FLIB, robust cluster (code)

Linear regression                                       Number of obs =     226
                                                        F(  8,    79) =    5.94
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.2722
                                                        Root MSE      =  2.2288

                                    (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |    .634825   .2871346     2.21   0.030     .0632979    1.206352
        NI_S |    .502501   .1637523     3.07   0.003     .1765601    .8284418
         LNI |  -.1221958   .1234542    -0.99   0.325    -.3679252    .1235335
     LNI_NIS |  -.1485034   .0962898    -1.54   0.127    -.3401635    .0431566
         IND |     .00447   .0020001     2.23   0.028     .0004889    .0084511
        MCAP |   .0531707   .0915733     0.58   0.563    -.1291014    .2354428
        AUDR |   .6561011   .2792746     2.35   0.021     .1002189    1.211983
        FLIB |   .0922146   .9344526     0.10   0.922    -1.767767    1.952196
       _cons |  -2.781999   2.503308    -1.11   0.270    -7.764709     2.20071
------------------------------------------------------------------------------

est store modA


. regress SP BVE_S CI_S LCI LCI_CIS IND MCAP AUDR FLIB, robust cluster (code)

Linear regression                                       Number of obs =     226
```

```
                                                F(  8,    79) =    4.47
                                                Prob > F      =  0.0002
                                                R-squared     =  0.2406
                                                Root MSE      =  2.2767

                                (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .6946416   .2802093     2.48   0.015      .136899    1.252384
        CI_S |   .3655301   .1418332     2.58   0.012     .0832182    .6478421
         LCI |  -.0384456     .10621    -0.36   0.718    -.2498514    .1729602
     LCI_CIS |  -.1049555   .0791939    -1.33   0.189    -.2625871     .052676
         IND |   .0048567    .002156     2.25   0.027     .0005653     .009148
        MCAP |   .0617927   .0926678     0.67   0.507     -.122658    .2462435
        AUDR |    .551119   .2765413     1.99   0.050     .0006772    1.101561
        FLIB |   .1563097   .9674368     0.16   0.872    -1.769325    2.081944
       _cons |  -3.052688   2.548767    -1.20   0.235    -8.125882    2.020507
------------------------------------------------------------------------------

est store modB

. vuong modA modB
                     Model 1        Model 2
R-Squared             0.2722         0.2406

Vuong Z-Statistic     1.9806
  p-value             0.0476


. regress SP BVE_S NI_S OCI_S  LNI LOCI LNI_NIS LOCI_OCIS IND MCAP AUDR FLIB,
robust cluster (code)

Linear regression                               Number of obs =     226
                                                F( 11,    79) =    4.88
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2793
                                                Root MSE      =  2.2334

                                (Std. Err. adjusted for 80 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .6187838   .2925844     2.11   0.038     .0364091    1.201158
        NI_S |   .4821382   .1617826     2.98   0.004      .160118    .8041584
       OCI_S |   .5515556   .2259747     2.44   0.017     .1017641    1.001347
         LNI |  -.1322112   .1260446    -1.05   0.297    -.3830967    .1186743
        LOCI |   .0245418   .1370379     0.18   0.858    -.2482253    .2973089
     LNI_NIS |  -.1538836   .0991338    -1.55   0.125    -.3512045    .0434373
    LOCI_OCIS |  -.0946176   .1581008    -0.60   0.551    -.4093093    .2200742
         IND |   .0045585   .0019881     2.29   0.025     .0006013    .0085158
        MCAP |   .0567374    .092271     0.61   0.540    -.1269235    .2403983
        AUDR |   .7292917   .3017503     2.42   0.018     .1286728    1.329911
        FLIB |   .1509357   .9341329     0.16   0.872    -1.708409    2.010281
       _cons |   -2.89098   2.490438    -1.16   0.249    -7.848073    2.066112
------------------------------------------------------------------------------
```

APPENDIX F: DEFLATOR SELECTION FOR FINANCIAL AND NONFINANCIAL FIRMS- A SENSITIVITY ANALYSIS

Appendix F

The Relative Value Relevance of Net Income and Comprehensive Income for Financial Firms When Beginning Price of Equity is the Deflator

```
.regress SP BVE_S NI_MC LNI LNI_NIMC, vce (robust)

Linear regression                                       Number of obs =     123
                                                        F(  4,   118) =   10.72
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.3712
                                                        Root MSE      =  .40866

------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |     .88477   .1891028     4.68   0.000     .5102951    1.259245
       NI_MC |   .3786597    .091537     4.14   0.000     .1973915     .559928
         LNI |  -.0083502   .0587071    -0.14   0.887    -.1246063    .1079058
    LNI_NIMC |  -.0041487   .0760498    -0.05   0.957     -.154748    .1464506
       _cons |   .0309139   .0482081     0.64   0.523    -.0645513     .126379
------------------------------------------------------------------------------

. est store modA


. regress SP BVE_S CI_MC  LCI  LCI_CIMC, vce (robust)

Linear regression                                       Number of obs =     123
                                                        F(  4,   118) =    9.05
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.3000
                                                        Root MSE      =  .43117

------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .7599481   .1887643     4.03   0.000     .3861434    1.133753
       CI_MC |   .1441245   .0491537     2.93   0.004     .0467868    .2414622
         LCI |  -.0346868   .0868532    -0.40   0.690    -.2066797    .1373062
    LCI_CIMC |  -.0043979   .0947264    -0.05   0.963     -.191982    .1831862
       _cons |   .1111901   .0576745     1.93   0.056    -.0030211    .2254013
------------------------------------------------------------------------------

. est store modB

. vuong modA modB
                    Model 1        Model 2
R-Squared            0.3712         0.3000

Vuong Z-Statistic    0.7738
  p-value            0.4391
```

Incremental Value Relevance of Other Comprehensive Income and its Components for Financial Firms When Beginning Price of Equity is the Deflator

```
. regress SP BVE_S NI_MC OCI_S LNI  LOCI LNI_NIMC LOCI_OCI_MC, vce (robust)

Linear regression                                       Number of obs =     123
                                                        F(  7,   115) =    7.37
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.3936
                                                        Root MSE      =  .40651

------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .7963282   .1899964     4.19   0.000     .4199819    1.172675
       NI_MC |   .3663727   .0896207     4.09   0.000     .1888514     .543894
      OCI_MC |   .2734162   .0928231     2.95   0.004     .0895516    .4572809
         LNI |  -.0187559   .0624515    -0.30   0.764    -.1424602    .1049485
        LOCI |    .042072    .038562     1.09   0.278    -.0343118    .1184559
    LNI_NIMC |  -.0115042   .0802493    -0.14   0.886    -.1704627    .1474544
 LOCI_OCI_MC |   -.011872   .0368671    -0.32   0.748    -.0848986    .0611547
       _cons |   .0125446   .0478943     0.26   0.794    -.0823248     .107414
------------------------------------------------------------------------------


. regress SP NI_MC LNI LNI_NIMC REV_MC SEC_MC PEN_MC, vce(robust)

Linear regression                                       Number of obs =     123
                                                        F(  6,   116) =    5.52
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.2509
                                                        Root MSE      =  .44987

------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       NI_MC |   .3977692   .1005633     3.96   0.000     .1985908    .5969475
         LNI |  -.0958595   .0651008    -1.47   0.144    -.2247998    .0330808
    LNI_NIMC |  -.0771235    .083054    -0.93   0.355    -.2416225    .0873755
      REV_MC |   .0818079   .1274932     0.64   0.522    -.1707086    .3343243
      SEC_MC |  -.2650156   .1192435    -2.22   0.028    -.0288389    .5011923
      PEN_MC |   .1595737   .1120251     1.42   0.157    -.0623061    .3814534
       _cons |   .1816045   .0606896     2.99   0.003      .061401     .301808
------------------------------------------------------------------------------
```

The Relative Value Relevance of Net Income and Comprehensive Income for Nonfinancial Firms When Beginning Price of Equity is the Deflator

```
.regress SP BVE_S NI_MC LNI LNI_NIMC, vce (robust)

Linear regression                                       Number of obs =     226
                                                        F(  4,   221) =    6.62
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.2285
                                                        Root MSE      =  2.2738

------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .7196417   .1788279     4.02   0.000     .3672154    1.072068
       NI_MC |   .5033795   .2250878     2.24   0.026     .0597864    .9469727
         LNI |  -.0097647   .1224877    -0.08   0.937    -.2511582    .2316288
    LNI_NIMC |    .051433   .0461252     1.12   0.266    -.0394685    .1423344
       _cons |   .7144912    .188317     3.79   0.000     .3433644    1.085618
------------------------------------------------------------------------------

. est store modA


.regress SP BVE_S CI_MC  LCI  LCI_CIMC, vce (robust)

Linear regression                                       Number of obs =     226
                                                        F(  4,   221) =    5.10
                                                        Prob > F      =  0.0006
                                                        R-squared     =  0.1825
                                                        Root MSE      =  2.3407

------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .6512641   .2084196     3.12   0.002       .24052    1.062008
       CI_MC |   .4678294   .2081411     2.25   0.026     .0576341    .8780248
         LCI |  -.0406923   .1106209    -0.37   0.713    -.2586992    .1773146
    LCI_CIMC |  -.0441873   .1118636    -0.40   0.693    -.2646432    .1762686
       _cons |   .7240307   .2084481     3.47   0.001     .3132304    1.134831
 ------------------------------------------------------------------------------


. est store modB


. vuong modA modB
                     Model 1        Model 2
R-Squared             0.2285         0.1825

Vuong Z-Statistic     0.8934
  p-value             0.3717
```

Incremental Value Relevance of Other Comprehensive Income and its Components for Nonfinancial Firms When Beginning Price of Equity is the Deflator

```
.regress SP BVE_S NI_MC OCI_MC LNI  LOCI LNI_NIMC LOCI_OCI_MC, vce (robust)

Linear regression                                       Number of obs =     226
                                                        F(  7,   218) =    3.97
                                                        Prob > F      =  0.0004
                                                        R-squared     =  0.2346
                                                        Root MSE      =  2.2804
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .7279976   .1831788     3.97   0.000     .3669696    1.089026
       NI_MC |    .463267   .2116393     2.19   0.030     .0461459     .880388
      OCI_MC |   .1509844   .9040289     0.17   0.868    -1.630771     1.93274
         LNI |  -.0270645    .130836    -0.21   0.836      -.28493    .2308009
        LOCI |   .1358251    .166931     0.81   0.417    -.1931801    .4648303
    LNI_NIMC |   .0545592   .0476081     1.15   0.253     -.039272    .1483903
 LOCI_OCI_MC |  -.1436267   .2201846    -0.65   0.515    -.5775897    .2903363
       _cons |   .6700622   .2040543     3.28   0.001     .2678903    1.072234
------------------------------------------------------------------------------


regress SP BVE_S NI_MC LNI LNI_NIMC REV_MC SEC_MC PEN_MC, vce(robust)

Linear regression                                       Number of obs =     226
                                                        F(  7,   218) =    4.39
                                                        Prob > F      =  0.0001
                                                        R-squared     =  0.2383
                                                        Root MSE      =  2.2748

------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .7129589   .1810134     3.94   0.000     .3561986    1.069719
       NI_MC |   .4734039   .2111434     2.24   0.026     .0572603    .8895476
         LNI |   .0109049    .122431     0.09   0.929    -.2303951    .2522048
    LNI_NIMC |   .0501161   .0464817     1.08   0.282     -.041495    .1417271
      REV_MC |   .2823789   .4618639     0.61   0.542    -.6279113    1.192669
      SEC_MC |  -.3904919   .2458478    -1.59   0.114    -.8750347    .0940509
      PEN_MC |   .8257463   .7010429     1.18   0.240     -.555943    2.207436
       _cons |   .7092775   .1958226     3.62   0.000     .3233297    1.095225
------------------------------------------------------------------------------
```

.

APPENDIX G: OLS STANDARD ERRORS CLUSTERED AT FIRM LEVEL FOR CORPORATE GOVERNANCE MECHANISMS

Appendix G
OLS Standard Errors Clustered at the Firm Level for Corporate Governance Mechanisms

```
. regress SP BVE_S  NI_S OCI_S_ BCGSCORE  BCGSCORE_OCI_S LNI  LOCI  LNI_NIS  LOCI_OCI_S
FSIZE  IND FLIB, robust cluster (code)

Linear regression                                      Number of obs =     327
                                                       F( 12,   108) =    6.56
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.3508
                                                       Root MSE      =  1.7436

                                    (Std. Err. adjusted for 109 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        BVE_S |   .6686441   .2447659     2.73   0.007     .1834755    1.153813
         NI_S |   .7045426   .1579487     4.46   0.000     .3914609    1.017624
       OCI_S_ |   .3196815   .1842905     1.73   0.086    -.0456142    .6849772
     BCGSCORE |   -.021578   .0645723    -0.33   0.739    -.1495715    .1064155
  BCGSCORE_OCI |   .1551359   .0761887     2.04   0.044     .0041165    .3061552
          LNI |   .0026091   .1020772     0.03   0.980    -.1997257    .2049438
         LOCI |  -.0111728   .1353587    -0.08   0.934    -.2794772    .2571317
      LNI_NIS |    .109271   .0759743     1.44   0.153    -.0413233    .2598652
   LOCI_OCI_S |   .0560842   .0938383     0.60   0.551    -.1299196    .2420879
        FSIZE |   .1552655   .0548673     2.83   0.006     .0465091    .2640219
          IND |   .0001261   .0000866     1.46   0.148    -.0000456    .0002977
         FLIB |   .1427406   .0401577     3.55   0.001      .063141    .2223402
        _cons |  -3.490171   1.283511    -2.72   0.008    -6.034313   -.9460299
------------------------------------------------------------------------------


. regress SP BVE_S NI_S  OCI_S_ RANK OCI_S_RANK LNI  LOCI  LNI_NIS  LOCI_OCI_S FSIZE  IND
FLIB,  robust cluster (code)

Linear regression                                      Number of obs =     324
                                                       F( 12,   108) =    6.31
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.3586
                                                       Root MSE      =  1.7395

                                    (Std. Err. adjusted for 109 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |    .641129   .2133007     3.01   0.003     .2183301    1.063928
        NI_S |   .7317852   .1620471     4.52   0.000     .4105798    1.052991
      OCI_S_ |   .3251828   .1860037     1.75   0.083    -.0435089    .6938745
        RANK |  -.0076715   .2199665    -0.03   0.972    -.4436833    .4283403
  OCI_S_RANK |   .5621015   .3338094     1.68   0.095    -.0995666     1.22377
         LNI |   .0139067   .1071123     0.13   0.897    -.1984085    .2262219
        LOCI |   .0405209    .134175     0.30   0.763    -.2254372    .3064791
     LNI_NIS |   .1635156   .0853901     1.91   0.058    -.0057424    .3327736
  LOCI_OCI_S |   .0326509   .0915365     0.36   0.722    -.1487903    .2140921
       FSIZE |   .1614817   .0550467     2.93   0.004     .0523697    .2705938
         IND |   .0001159   .0000854     1.36   0.178    -.0000535    .0002852
        FLIB |   .1420959   .0403079     3.53   0.001     .0621986    .2219932
       _cons |  -3.887756   1.281359    -3.03   0.003    -6.427631   -1.347881
------------------------------------------------------------------------------

.
```

APPENDIX H: OLS STANDARD ERRORS CLUSTERED AT FIRM LEVEL FOR FAIR VALUE HIERARCHY INFORMATION

Appendix H
OLS Standard Errors Clustered at the Firm Level for Fair Value Hierarchy Information

```
regress price BVE_S NI_S  LNI LNI_NIS FVAL1 FVAL2 FVAL3, robust cluster (code)

Linear regression                                       Number of obs =     327
                                                        F(  7,   108) =   11.00
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.2138
                                                        Root MSE      =  1.3295

                                    (Std. Err. adjusted for 109 clusters in code)
------------------------------------------------------------------------------
             |               Robust
       price |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .2399398   .1121946     2.14   0.035     .0175507     .462329
        NI_S |   .2998396   .1321126     2.27   0.025     .0379695    .5617098
         LNI |  -.0902847   .0598825    -1.51   0.135    -.2089821    .0284128
     LNI_NIS |   .0094951   .0641448     0.15   0.883     -.117651    .1366412
       FVAL1 |   .0502927   .0130184     3.86   0.000     .0244879    .0760974
       FVAL2 |   .0561316    .026294     2.13   0.035     .0040124    .1082509
       FVAL3 |   .1202733   .1240851     0.97   0.335    -.1256849    .3662316
       _cons |   .3637997   .0941093     3.87   0.000     .1772589    .5503406
------------------------------------------------------------------------------


. regress price TCI__S NI_S FVAL1 FVAL2 FVAL3 BCG BCG_FVAL1 BCG_FVAL2
BCG_FVAL3 IND MCAP FLIB LNI LNI_NIS, robust cluster (code)

Linear regression                                       Number of obs =     326
                                                        F( 14,   108) =    8.26
                                                        Prob > F      =  0.0000
                                                        R-squared     =  0.2736
                                                        Root MSE      =  1.2936

                                    (Std. Err. adjusted for 109 clusters in code)
------------------------------------------------------------------------------
             |               Robust
       price |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      TCI__S |   .2292243   .1117818     2.05   0.043     .0076533    .4507953
        NI_S |   .2570337   .1321167     1.95   0.054    -.0048445    .5189119
       FVAL1 |   .0359333   .0134094     2.68   0.009     .0093535    .0625132
       FVAL2 |    .056814   .0251663     2.26   0.026     .0069301    .1066979
       FVAL3 |   .1037681   .1167859     0.89   0.376    -.1277218     .335258
         BCG |   .3627726   .4159511     0.87   0.385    -.4617147     1.18726
   BCG_FVAL1 |   .1666233   .2745637     0.61   0.545    -.3776096    .7108562
   BCG_FVAL2 |   .0690874    .028787     2.40   0.018     .0120265    .1261483
   BCG_FVAL3 |   .4948197   .2386574     2.07   0.041     .0217593    .9678801
         IND |    .000136   .0006832     0.20   0.843    -.0012182    .0014902
        MCAP |   .1186805   .0336035     3.53   0.001     .0520726    .1852884
        FLIB |   .4266382   .3732489     1.14   0.256    -.3132058    1.166482
         LNI |  -.1190915   .0600542    -1.98   0.050    -.2381294   -.0000537
     LNI_NIS |  -.0018879   .0570032    -0.03   0.974    -.1148781    .1111023
       _cons |  -2.482909    .864912    -2.87   0.005    -4.197315   -.7685039
------------------------------------------------------------------------------
```

APPENDIX I: OLS STANDARD ERRORS CLUSTERED AT THE FIRM LEVEL FOR LEVEL Of COMPLIANCE

Appendix I
OLS Standard Errors Clustered at the Firm Level for Level of Compliance

```
regress SP BVE_S NI_S REV_S SEC_S PEN_S IND FLIB AUDR FSIZE DEBT LNI
LNI_NIS, robust cluster (code)

Linear regression                                   Number of obs =     259
                                                    F( 12,    98) =    8.00
                                                    Prob > F      =  0.0000
                                                    R-squared     =  0.3054
                                                    Root MSE      =  1.0769

                                  (Std. Err. adjusted for 99 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .5093841   .2135473     2.39   0.019     .0856064    .9331618
        NI_S |   .2560245   .0924231     2.77   0.007      .072614    .4394351
       REV_S |   .2449413   .0706797     3.47   0.001     .1046797    .3852029
       SEC_S |  -.0325909   .1051669    -0.31   0.757    -.2412913    .1761094
       PEN_S |   .1881389   .1331661     1.41   0.161    -.0761249    .4524028
         IND |   .0001587   .0000809     1.96   0.052    -1.74e-06    .0003192
        FLIB |   .0322442   .0672112     0.48   0.632    -.1011342    .1656225
        AUDR |   .7143588   .1729134     4.13   0.000     .3712178      1.0575
       FSIZE |   .0160589   .0243309     0.66   0.511     -.032225    .0643429
        DEBT |  -.0892802   .0488286    -1.83   0.071    -.1861789    .0076186
         LNI |  -.0282163   .0632643    -0.45   0.657    -.1537622    .0973296
     LNI_NIS |  -.0849358   .0602486    -1.41   0.162    -.2044971    .0346256
       _cons |   1.314812   .9732983     1.35   0.180     -.616667    3.246291
------------------------------------------------------------------------------

regress SP BVE_S NI_S REV_S SEC_S PEN_S COMPL FLIB AUDR FSIZE DEBT LNI
LNI_NIS, robust cluster (code)

Linear regression                                   Number of obs =     259
                                                    F( 12,    98) =    8.17
                                                    Prob > F      =  0.0000
                                                    R-squared     =  0.3217
                                                    Root MSE      =  1.0641

                                  (Std. Err. adjusted for 99 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .8131006   .2699195     3.01   0.003     .2774541    1.348747
        NI_S |   .2644066   .0823916     3.21   0.002     .1009031    .4279101
       REV_S |   .2777633   .0655735     4.24   0.000     .1476348    .4078919
       SEC_S |  -.0531331   .0755622    -0.70   0.484    -.2030839    .0968177
       PEN_S |   .2000198   .1527518     1.31   0.193    -.1031112    .5031508
       COMPL |   .7314577   .3541468     2.07   0.042     .0286649     1.43425
        FLIB |   .0521634   .0574126     0.91   0.366    -.0617702    .1660969
        AUDR |   .5478028    .141729     3.87   0.000     .2665463    .8290593
       FSIZE |   .0133612    .024607     0.54   0.588    -.0354706     .062193
        DEBT |  -.1023557   .0490415    -2.09   0.039    -.1996769   -.0050345
         LNI |  -.0415989   .0652422    -0.64   0.525      -.17107    .0878722
     LNI_NIS |  -.1334543   .0674943    -1.98   0.051    -.2673946     .000486
       _cons |   1.084256   .8671371     1.25   0.214    -.6365491    2.805062
------------------------------------------------------------------------------
```

```
by   RANK, sort: regress SP BVE_S NI_S    REV_S SEC_S   PEN_S COMPL FLIB AUDR
FSIZE  DEBT LNI LNI_NIS,  robust cluster (code)

-------------------------------------------------------------------------------
-------------------------------------------------------------
-> RANK = 0

Linear regression                                      Number of obs =      72
                                                       F( 12,    62) =    6.14
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.3095
                                                       Root MSE      =  .90302

                                    (Std. Err. adjusted for 63 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .5627869   .2369098     2.38   0.021      .089211    1.036363
        NI_S |   .4115011   .0819381     5.02   0.000     .2477092     .575293
       REV_S |   .0665766   .0867541     0.77   0.446    -.1068423    .2399955
       SEC_S |   .0094682   .0941604     0.10   0.920    -.1787557    .1976921
       PEN_S |   .0269276   .1354196     0.20   0.843    -.2437724    .2976275
       COMPL |    .541964   .3874722     1.40   0.167     -.232582     1.31651
        FLIB |  -.0847876   .0867729    -0.98   0.332    -.2582441    .0886689
        AUDR |    .306304   .1869392     1.64   0.106    -.0673822    .6799901
       FSIZE |  -.0902845   .0573762    -1.57   0.121    -.2049779     .024409
        DEBT |  -.0273481   .0695748    -0.39   0.696    -.1664261    .1117299
         LNI |   .0390428   .1272157     0.31   0.760    -.2152577    .2933433
     LNI_NIS |  -.1422125   .0774394    -1.84   0.071    -.2970117    .0125866
       _cons |  -2.999918   1.433285    -2.09   0.040    -5.865015   -.1348221
------------------------------------------------------------------------------

-------------------------------------------------------------------------------
-------------------------------------------------------------
-> RANK = 1

Linear regression                                      Number of obs =     187
                                                       F( 12,    91) =    8.06
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.3787
                                                       Root MSE      =  1.0986

                                    (Std. Err. adjusted for 92 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .9014469   .4602844     1.96   0.053    -.0128515    1.815745
        NI_S |   .2378863    .095105     2.50   0.014      .048972    .4268007
       REV_S |   .3654468   .0896941     4.07   0.000     .1872806    .5436131
       SEC_S |    .018933   .0987948     0.19   0.848    -.1773107    .2151767
       PEN_S |   .1800602   .1800129     1.00   0.320    -.1775133    .5376337
       COMPL |     .93672   .3665377     2.56   0.012      .208638    1.664802
        FLIB |   .1119597   .0720713     1.55   0.124    -.0312011    .2551205
        AUDR |   .6532661   .1789511     3.65   0.000     .2978017     1.00873
       FSIZE |   .0458014   .0292338     1.57   0.121    -.0122679    .1038708
        DEBT |  -.1429123    .059705    -2.39   0.019     -.261509   -.0243156
         LNI |  -.0830074   .0763908    -1.09   0.280    -.2347484    .0687336
     LNI_NIS |  -.0887558   .0818406    -1.08   0.281    -.2513222    .0738105
       _cons |   2.649838   1.116076     2.37   0.020     .4328893    4.866786
------------------------------------------------------------------------------
```

```
reg SP BVE_S NI_S REV_S SEC_S PEN_S COMPL REV_S_CMPL  SEC_S_COMPL PEN_S_COMPL
LNI

LNI_NIS FSIZE IND AUDR DEBT, robust cluster (code)

Linear regression                                      Number of obs =     259
                                                       F( 15,    98) =    6.18
                                                       Prob > F      =  0.0000
                                                       R-squared     =  0.3506
                                                       Root MSE      =  1.0473

                                    (Std. Err. adjusted for 99 clusters in code)
------------------------------------------------------------------------------
             |               Robust
          SP |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       BVE_S |   .5384774   .2229394     2.42   0.018     .0960615    .9808933
        NI_S |   .2420788    .089263     2.71   0.008     .0649392    .4192183
       REV_S |   .2558628   .0700586     3.65   0.000     .1168339    .3948917
       SEC_S |  -.0083733   .0987734    -0.08   0.933     -.204386    .1876393
       PEN_S |   .1774554   .1123034     1.58   0.117     -.045407    .4003178
       COMPL |   .6817123   .3396861     2.01   0.048     .0076163    1.355808
  REV_S_CMPL |    .292201   .1400785     2.09   0.040     .0142198    .5701822
 SEC_S_COMPL |  -.0573215   .4623446    -0.12   0.902    -.9748294    .8601864
 PEN_S_COMPL |   .3679246   .2037896     1.81   0.074     .7723386    .0364893
         LNI |  -.0539444   .0667405    -0.81   0.421    -.1863887    .0784999
     LNI_NIS |  -.1117126   .0698424    -1.60   0.113    -.2503126    .0268873
       FSIZE |   .0131632   .0236282     0.56   0.579    -.0337263    .0600526
         IND |   .0001572   .0000769     2.04   0.044     4.60e-06    .0003099
        AUDR |    .683305   .1644805     4.15   0.000     .3568987    1.009711
        DEBT |  -.1155446   .0510288    -2.26   0.026    -.2168095   -.0142796
       _cons |   1.487967   .8206694     1.81   0.073    -.1406243    3.116559
------------------------------------------------------------------------------
```