

## **IMPACT OF IFRS ADOPTION ON VALUE RELEVANCE OF EARNINGS AND BOOK VALUE OF NIGERIAN LISTED NON-FINANCIAL FIRMS**

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### **ABSTRACT**

Emergence and subsequent rife adoption of IFRS globally has redefined course for more empirical studies into assumed over-flocked value relevance discourse in accounting research. Owing to confounding submissions on value relevance of IFRS-based accounting information, this study investigates plausible influence of IFRS adoption on value relevance of earnings and book value of the Nigerian listed non-financial firms. The study relied on panel data sourced from forty-six listed non-financial companies with 31 December as financial year-end between 2008 and 2015. Panel least square regression was adopted to perform relative and incremental value relevance metrics. The relative metric results showed that earnings per share and book value are jointly and individually more value relevant positively and significantly during IFRS regime than under erstwhile Nigerian SAS. However, incremental metric analysis revealed that only earnings of the sampled firms is incrementally positive and significantly value relevant after IFRS adoption while positive influence of book value is statistically insignificant. These results confirm prior findings, suggesting that informative nature of IFRS is more value relevant to investors at the Nigerian stock market. As a matter of policy, we therefore recommend that Financial Reporting Council of Nigeria and NSE regulatory bodies as well as other accounting standards setters and stock markets regulators across the globe should work in tandem to strengthen IFRS adoption and compliance by listed firms.

**Keywords:** Value relevance, Earnings, Book value, IFRS adoption, Stock market.

### **INTRODUCTION**

Quest for efficient, result-oriented and decision useful accounting information by various users have become a prominent deal in business-world. Specifically, essence of investors' bid for investment of any kind is to derive optimum returns periodically. More importantly, investors' strategy for desired profitable business is based on adequate, relevant and qualitative accounting information (Barth, Landsman & Lang, 2008). One of the key information that investors at the stock markets seek to evaluate viability of their economic investment decision is periodic audited accounting information of the target firm. This information presents financial position and performance of the business, among others. It also enables investors to make predictions (or forecast) about the future stands of their intended business entity. Thus, there is a need for accounting information that has been prepared through ideal and informative accounting principles, conventions and/or standards to support investors' investment strategies.

Accounting information are generally prepared in line with accounting standards along with several other regulatory demands. Until the dawn of last decade, accounting information of listed

companies were prepared in tandem with various regional or national based accounting standards. Prior to emergence of International Financial Reporting Standards (IFRS) in 2001, issuance of some local standards were framed from either International Accounting Standards (IASs) or Financial Accounting Standards (FASs) issued by the erstwhile International Accounting Standards Committee (IASC), United Kingdom, and Financial Accounting Standards Board (FASB), United States, respectively. A case was former Nigerian Statement of Accounting Standards (SASs) which were drawn from IASs. However, many of those local standards have been widely punctured due to weak update (Umoren & Enang, 2015) and inability to support investors' global investment drives in this era of globalised economy. For instance in Nigeria, until 2010 when the federal government approved convergence to IFRS, there were thirty-one (31) SASs in issue. Although issuance of SAS was based on IAS in issue with special regard to local business conditions, there were SASs whose IASs bases have been repealed or modified without prompt resultant adjustment on SASs before roadmap for convergence to IFRS was rolled out in 2010. Hence, there was a need for better accounting standards that could reduce asymmetric information, ensure more informative financial reports and support investors' decisions. This led to the birth of renowned IFRS in 2001.

Since its emergence in 2001, roughly 120 countries and reporting authorities permit or requires IFRS for domestic listed firms while 90 nations have fully conformed to IFRS as issued by IASB. IFRS is believed to be a better accounting standards that would provide efficient guide in the issuance of improved decision supporting accounting information. This could be adduced as one of the key reasons for its growing world-wide acceptance.

Accounting information is described as financial (quantitative) and qualitative information conveyed through periodic corporate financial reports together with its notes, reflecting the structure and dynamics of the company's wealth, financial position and results which can inform various users' economic decision making functions (Scorte, Cozma & Rus, 2009; Jackson & Sawyers, 2007). That is, these are accounting data that reflect all economic functions that an entity has undergone throughout a just concluded accounting period, certified by independent auditor(s) and made available for public consumption. There are numerous accounting figures but more importantly are the bottom-line items of both statement of financial position and financial performance (income statement) in line with Ohlson (1995) price valuation model. These are earning and book value of equity which are believed could form basic accounting information that express how an economic entity had financially performed and positioned during an accounting year. The way these information are processed by different investors has effect on the share value of such entity in the stock market which is otherwise enunciated as value relevance.

According to Karğın (2013), value relevance is the ability of accounting information contained in the published financial statements to capture and encapsulate stock market measures. Earning and book value of equity have been well studied as accounting information that are capable of explaining whatever happens to stock values. Prior to IFRS adoption and after it was adopted, confounding literature abound on different ways in which these accounting data could influence market value of listed firms. Thus, there is established relationship between these variables in the two periods (i.e. pre- and post-IFRS). However, its forms may differ from one economy or capital market to the other.

Nigerian Stock Exchange (NSE) is a product of Lagos Stock Exchange incorporated as Limited Liability Company in September 1960. In order to globalise the NSE, federal government of Nigerian repealed laws that restrained foreign investors from participating in the market in 1995. As at April 2017, the market capitalisation of the exchange was hovering around N8.7tr (approximately \$28.5bn). Meanwhile, the market reached an all-time All Share Index (ASI) of 43,031.83 points in July 2014 and one of the top performing exchanges globally in 2012 (Onyema, 2013). As at December 31 2016, being the second largest financial centre in sub-Saharan Africa, the NSE record showed total market capitalisation of ₦16.186trillion (US\$53.068billion) comprising equity and bonds markets, 170 equity listed companies with market capitalisation of ₦9.3trillion (US\$30.446) (Onyema, 2017). This information suggests a significant downturn in the market capitalisation between 2016 and 2017 due to national economic recession.

However, out of approximately 57% of total market capitalisation represented by equity market, non-financial sectors alone accounts for 60% while financial sector accounts for the remaining 40%. Being the larger group of sectors in the market, it is assumed that quality of accounting information issue by non-financial sector might significantly affect the stock market. As such, the focus of this study is directed to equity-based Nigerian listed non-financial firms whose audited financial reports emphatically indicate compliance with IFRS. Due to internationally prone nature of financial services industry category, it could have been inevitably mandatory for it to have quickly switched to IFRS before it was generally made compulsory for all Nigerian listed firms. Notwithstanding, a number of non-financial industry firms under manufacturing, health, oil and gas sectors among others are highly attracted to global investors whose interest in these firms could only be strengthened by IFRS-based financial reports.

Therefore, to ensure improved foreign investors' participation in equity of this sectoral group on the floor of NSE thereby strengthening Nigerian stock market, assessment of value relevance of non-financial sectors' accounting information becomes imperious. Not only that, but to also observe whether accounting information of non-financial sectors in the NSE are more value relevant under IFRS than the one issued under local Nigerian SASs. Attempt to establish this fact informed basis or justification for this study. The outcome of this study is therefore expected to be of essential benefit to the stock market operators, prospective investors, and Financial Reporting Council of Nigeria (FRCN) among others.

As a follow-up to Umoren and Enang (2015) who investigate influence of IFRS adoption on value relevance of banking sector's accounting information in the Nigeria stock market, it is found necessary to examine value relevancy of these information in the non-financial sectors. This provoked the question that how and to what extent has IFRS adoption influenced accounting information of listed non-financial firms in the NSE? Consequently, the main focus of this study is to examine influence of IFRS adoption on value relevance of earnings and book value of non-financial sectors in the NSE. Specifically, the study strived to observe relative and incremental value relevance of the accounting data pre- and post-IFRS.

## **LITERATURE REVIEW**

This section presents theoretical background for the study as well as review of related extant empirical literature.

## Theoretical Background

This study draws from signalling and Efficient Market Hypothesis (EMH) conjectures. To start with, signalling theory is a widely applied theory in accounting discipline. For instance, signalling theory was employed in signalling treatment of dividend pay-out by Miller and Rock (1985), signalling role of conservatism in a debt market with asymmetric information (Wang, hÓgartaigh & Ziji, 2009) among others. In a specific term, signalling theory emerged explicitly to address information asymmetries between the preparers of financial reports and various users in the stock markets (Morris, 1987; Spence, 1973). According to Toms (2002), signalling postulate suggests that, where certain conditions are complied with, true signals will be held and false ones rejected. As such, listed company can signal the quality of its equity and financial performance (earnings) to investors by resorting to additional mechanisms when verification is costly. This process could lead to a shift in the value relevance of accounting data especially when IFRS that is believed to be more informative is adopted and applied in the preparation of the accounting information.

Furthermore, in order to fortify value relevance discourse in the face of alternative (more informative) accounting standards (IFRS), EMH is observed relevant. As noted by Tsalatvoutas (2009), market efficiency has to do with the way information is absorbed and processed by market participants. Eugene Fama asserted that, nature of information made available at any point in time impacts on share values while security market becomes efficient if necessary information is available to investors (Akinsulire, 2014). Unequivocally, accounting information is essential to determining information efficiency of security market. Accordingly, to ensure efficiency of a capital market, sound regulation that engenders timely, relevant, detailed and informative accounting figures at all levels is a must. In the event of IFRS emergence and its subsequent adoption at the NSE, improved value relevance of accounting information under the standards may suggest enhanced information efficiency of the market.

## Review of Empirical Literature

Income smoothing, reporting aggressiveness, earnings management (Ahmed, Neel & Wang, 2013) and value relevance (Umoren & Enang, 2015) are parts of accounting quality metrics. Financial reporting quality which depends on accounting standards, firm reporting incentives and country-based institutional framework (Clarkson, Hanna, Richardson & Thompson, 2010) inform accounting quality. This explains crucial role of ‘sound’ accounting standards and mandatory directive for such standards to be embraced and applied by the concerned firms, which would be expecting better value for doing so. Hence, this study employed value relevance accounting quality measure as it has been popularly used in literature, and because it expresses direct interconnection between accounting bottom-line data and share values. Prior studies that have used this measure include but not limited to Clarkson *et al*, (2010), Umoren and Enang (2015), Chalmers, Clinch and Godfrey (2011), Okafor, Anderson and Warsame (2016), Bogstrand and Larsson (2012), Ghayoumi, Nayeri, Ansari and Raeesi (2011).

Extant value relevance literature that examined how accounting information influence share value before IFRS adoption (or with no attention on IFRS) abound and with variegated submissions. For instance Ragab and Omran (2008) employ price model to observe whether

investors in the Egyptian stock market find accounting information based on the Egyptian accounting standards to be suitable in stock valuation between 1998 and 2002. They confirmed value relevance of accounting information in the stock market and that stock prices in Egypt are less informative about the future value of the firm than accounting information. Also, panel data analysis conducted on 1,046 company-year observations drawn from 145 financial and non-financial companies in Mexico by Vázquez, Valdés and Herrera (2007) shows that earnings are significantly value relevant, while only book value is value relevant under Ordinary Least Squared Regression (OLS) analysis.

Furthermore, Shehzad and Ismail (2014) investigate value relevancy of earning per share and book value in the nineteen (19) private banks (banking sectors) of Pakistan by employing pooled regression technique. The findings reveal that both accounting information explain sizeable aspect of stock price while earnings is more value relevant than book value. Omokhudu and Ibadin (2015) observe the extent to which accounting information is associated with firm value in the Nigerian stock market between 1995 and 2013 by using modified basic Ohlson (1995) model. The result of pooled and panel data regression indicates related and significant value relevance of accounting information (earning, dividend and cash flow) except book value that was related but not significant.

In line with the focus of this study, generally there is a vast account of literature on influence of IFRS on value relevance of accounting data. Accounts of some of these existing empirical findings are showcased in the ensuing paragraphs.

Okafor *et al.* (2016) examine whether accounting information under IFRS has incremental value relevance over information under Canadian GAAP. Using archival unbalanced data of companies listed on Toronto Stock Exchange for 2008 – 2013 study period, leading to 1,816 firm-year observations, results of the regression adjusted  $R^2$  showed that accounting information prepared and disclosed under IFRS exhibits higher price and returns value relevance than accounting information prepared under local GAAPs. Alashi and Dumlu (2015) also explore value relevance of accounting figures of the manufacturing firms listed on Borsa Istanbul pre- and post-IFRS period (i.e. 1996-2004 and 2005-2013). Regression model was employed to assess explanatory power of earnings and book value on stock prices. From the cross-sectional analysis, the study notes increased value relevance of accounting information after IFRS adoption.

Following period of investigation employed by Alashi and Dumlu (2015), Umoren and Enang (2015) examine whether mandatory adoption of IFRS has improved value relevance of earning and book value of twelve (12) listed financial banks pre-IFRS (2010-2011) and post-IFRS (2012-2013) adoption periods. Drawing from the study's descriptive statistics and least square regression analysis conducted, the result indicates that the equity value and earnings of banks are relatively value relevant to share prices under IFRS than under the former Nigerian SAS while earning is incrementally value relevant during post-IFRS period as book value of equity per share is incrementally less value relevant during the post-IFRS period.

Khanagha (2011) examines value relevance of accounting information pre- and post-IFRS periods between 2001 and 2008 by using the regression and portfolio approaches for seventeen



(17) listed United Arab Emirate (UAE) companies sampled. The sample consist 136 firm-year observations for price model and 119 firm-year observations for return model as well as portfolio approach. A comparison of results for the period before and after IFRS adoption base on explanatory power ( $R^2$ ) of regression and portfolio approaches indicate a decline in value relevance of accounting information post-IFRS adoption showing that IFRS in UAE did not improve value relevancy of accounting information.

In a comparison style, Clarkson *et al.* (2011) investigate impact of IFRS adoption on value relevancy of earnings and book value for equity valuation in Europe and Australia listed firms. Original accounting data of 3,488 firms reported for 2004 financial year and as restated in compliance with IFRS dictates were sourced. Stock prices of six months after the year of adoption was used. Basic Ohlson (1995) price model was estimated using OLS and weighted OLS regressions. Traditional linear pricing models results indicate that earnings per share and book value of equity numbers measured under IFRS information have similar explanatory power for firm stock prices with the same accounting information under original local GAAPs.

By employing markets appraisal dimension, Desoky and Mousa (2014) explore predictability features of earning as accounting information provided under IFRS in the Bahrain Bourse (BHB) and the Muscat Securities Market (MSM), Oman between 2005 – 2011 with sample of 280 and 203 firm-year observations from 40 and 29 different companies listed in BHB and MSM respectively. The study notes that, findings that adoption of IFRS led to improvement in the value relevance of financial reporting contradicts predictability attribute as predictability of accounting information in listed companies of BHB is reduced after the adaption of IFRS while that of MSM improved.

Chalmers *et al.* (2011) also examine whether adoption of IFRS increases value relevance of accounting figures of available firms listed on the Australian Securities Exchange within 1990 and 2008, leading to 20,025 firm-year observations. By using share prices at three months after fiscal year-end, results of their longitudinal study involving pre- and post-IFRS periods indicates that earnings become more value-relevant while book value of equity does not. The study finally suggests that, IFRS adoption affects the relationship between accounting information and market value even for a country categorized by strong investor protection and high-quality financial reporting and enforcement.

BoliBok (2014) investigate the effect of IFRS on the value relevance of fundamental accounting data announced by banks listed on the Warsaw Stock Exchange over 1998 and 2012. By employing Ohlson residual income valuation model, the empirical indication reveal that noted increase in the value relevance of both book values of equity and residual incomes of banks after introduction of IFRS is statistically insignificant.

Tsalavoutas, Andre and Evans (2012) examine value relevance of accounting fundamentals prior to and after mandatory transition to IFRS in Greece. The study records no significant change in the value relevance (including relative study) of earnings and book value of equity of the sampled 153 non-financial firms between 2004 (pre-IFRS) and 2005 (post-IFRS). Söderlund (2010) explore possible effect of IFRS adoption on accounting data of non-financial listed Finnish companies. Concisely, by using qualitative method of analysis, the study observes that

value relevance of income statement (earnings) decreased while the value relevance of balance sheet (book value of equity) increased.

Schiebel (2007) examines value relevance of IFRS and German GAAP on accounting data of twenty-four (24) companies listed on Frankfurt Stock Exchange over the period of 2000 - 2004. The sample consist 12 companies that complied with IFRS exclusively and another 12 firms that observed German GAAP throughout the period under investigation separately. Results of the regression analyses based on the study's selection criteria show that German GAAP is statistically more value relevant than IFRS.

Karğın (2013) investigates the value relevance of accounting information of Turkish listed non-financial firms in pre- and post-IFRS financial periods from 1998 to 2011, resulting to 1954 firm-year observations. Market value was related to book value and earnings per share by using the Ohlson model (1995). Generally, the study notes that book value is value relevant in determining market value or stock prices by using pooled OLS regression. In addition, results indicate that value relevance of accounting information has improved in the post-IFRS period (i.e. 2005 – 2011) considering book values while improvements was not observed in value relevance of earnings.

In a nutshell, it may be logically valid to assume that IFRS adoption (through its supposed higher quality and informativeness) should results in increased value relevance than local GAAPs more importantly in a reporting jurisdiction where the local GAAPs were weak. However, extant findings have documented confounding results. This submission corroborate exploratory finding of Kaaya, (2015). With focus on Nigerian reporting situation under SAS, it is pertinent to explore possible implication of IFRS adoption on value relevance with explicit attention on listed non-financial industrial sectors.

Drawing from the objective of this study and its theoretical background, the following statistical empirical guess were made.

**H<sub>01</sub>:** There is no significance difference between value relevance of accounting information of the Nigerian listed non-financial firms under IFRS and Nigerian local GAAPs.

**H<sub>02</sub>:** There is no significance effect of IFRS adoption on value relevance of accounting information of Nigerian listed non-financial firms issued under IFRS.

## **METHODOLOGY**

Quantitative research design method was employed in this study, suggesting positivistic research philosophy. This is due to the fact that the quantitative research method would guide in examining association between historical share prices and accounting information. The population consist of all listed non-financial companies on the NSE within 2008 and 2015. The period is selected because it accounts for Nigerian economy's gradual recovery from global financial crisis impact and growth which coincidentally reflect four equal years before and after IFRS mandatory adoption in Nigeria (i.e. 2008-2011 and 2012-2015). As at the time of this investigation, there were 186 listed firms on the NSE comprising 57 financial and 129 non-financial sectors.

The study target non-financial companies with December 31 as financial reporting year-end. Other criteria for selecting sample include that, the firm must have stated in its published audited annual reports that its annual reports is presented in compliance with IFRS starting from 2012 financial year-end and that it has not adopted the standards before 2012. Also, the company must be a listed non-financial firm whose share price is actively in trade throughout the period under investigation.

Out of the twelve sectoral groups on the Main Board of the NSE, non-financial industry category accounts for eleven (11) sectors with no listed firm under Utility sector as at the time of this investigation. Financial sector accounts for the twelfth sector. Thus, ten (10) sectors became the focus of this study, consisting 129 listed firms. With special attention on seventy-three (73) non-financial firms whose financial year-end dated December 31, forty-six (46) companies were found fit for this study using panel data technique. This represents about 63% of the target population. However, required information of the remaining 27 companies were either not completely available all through the period under investigation, changed accounting date within the period, did not specifically disclose its compliance with IFRS in 2012 financial reports or had started adopting IFRS earlier than 2012 financial year-end.

Panel data of the sampled firms were sourced from NSE archival data for the eight years study period, leading to 368 firm-year observations. Earnings per share (EPS) and book value per share (BVPS) of individual sampled entity for each financial year-end were used while share prices at third month after the year-end were also employed for the value relevance measures. Share price at the third month after the financial year-end becomes necessary so as to fairly capture realistic effect of the arrival of the published annual reports in the stock market on share values of the listed firms. Thus, Table 3.1 presents summary of data used and sources.

**Table 1: Price Model Variables and Sources**

N/S	Accounting Data	Source
1	Share price (SP)	NSE Archival Databank of share prices at the end of last working day in March after financial year-end.
2	Earnings per share (EPS)	Copies of published annual financial reports of the listed firms as issued to NSE
3	Book value of equity per share (BVPS)	Copies of published annual financial reports of the listed firms as issued to NSE

This study employed invariant Ohlson (1995) price valuation model. The model has been widely used in value relevance studies (Okafor *et al*, 2016; Umoren & Enang, 2015; Tsalavoutas *et al*, 2012; Chalmers *et al*, 2011; Clarkson *et al*, 2011). This suggests the use of share prices (market value per share) as the response variable, and earning per share and book value per share (accounting data) as explanatory variables. Thus, while mean, median and standard deviation were employed for descriptive analysis, the following model provided guide in the inferential statistics.

**Price Model** 
$$SP_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} + \varepsilon_{it}$$
 ----- (Eqn. 1)



Where  $SP_{it}$  is the share price of firm  $i$  at time  $t$  (March after the financial year-end),  $\beta$  is the intercept (i.e. constant term),  $EPS$  is the earning per share of firm  $i$  at time  $t$ ,  $BVPS_{it}$  is the book value of equity per share for firm  $i$  at time  $t$ ,  $\varepsilon_{it}$  represents error term,  $t$  represents 2008, ...2015. The model in equation 1 was used as relative value relevance measures to examine joint explanatory power of earnings and book value on share price. Subsequently, equation 2 and 3 were used to unearth variability in share price that could be explained univariately by each of the accounting information.

$$SP_{it} = a_0 + a_1 EPS_{it} + \varepsilon_{it} \quad \text{----- (Eqn. 2)}$$

$$SP_{it} = b_0 + b_1 BVPS_{it} + \varepsilon_{it} \quad \text{----- (Eqn. 3)}$$

The price model was later modified as shown in equation 4 to incorporate measure for assessing incremental effect of IFRS on value relevance.

### Modified Price Model:

$$SP_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} + \beta_3 P_{IFRS} + \beta_4 P_{IFRS} * EPS_{it} + \beta_5 P_{IFRS} * BVPS_{it} + \varepsilon_{it} \quad \text{-- (Eqn. 4)}$$

Where;  $P_{IFRS}$  is a dummy variable which equals 1 if post-IFRS period, otherwise 0,  $P_{IFRS} * EPS_{it}$  is the interactive variable between post-IFRS and earnings per share of firm  $i$  at time  $t$ ,  $P_{IFRS} * BVPS_{it}$  is the interactive variable between post-IFRS and book value of equity per share of firm  $i$  at time  $t$ . However, due to non-normality of the simple distribution, natural logarithm regression model was employed.

With regards to prior related study, incremental value relevance is observed when the coefficient of interaction between  $P_{IFRS}$  and accounting information are positive and significant (Umoren & Enang, 2015). Relatively, both slope coefficients and adjusted  $R^2$  are employed to examine improved value relevance upon the adoption of IFRS.

Since same units were study all through the period under investigation, panel least square regression was employed. As such, Hausman specification effect test was used to established appropriate effect model that was used. As to necessary diagnostic test to ensure that the model represents best linear unbiased estimation, Jarque-Bera form of normality test was performed due to Eviews statistical package used. Multicollinearity was tested using Pearson correlation test. Durbin-Watson was used to assess serial correlation of the error terms while presence of heteroscedasticity was checked using Breusch-Pagan-Godfrey test through Newy-West heteroscedasticity and autocorrelation (HAC) consistent error estimation. Nevertheless, the regression estimation was based on white cross-section robust coefficient covariance method.

## RESULTS AND DISCUSSION

This subsection presents results of various analyses performed as well as ensuing discussion. The analysis include descriptive and inferential statistics.

### Descriptive Statistics of Price Valuation Data

Table 2 and 3 present descriptive statistics of the data sourced for the study.

**Table 2: Descriptive statistics of the variables for 2008 - 2015**

	SPm	EPS	BVPS
<b>Mean</b>	23.90	1.46	8.95
<b>Median</b>	6.79	0.39	3.56
<b>Maximum</b>	293.23	16.01	82.59
<b>Minimum</b>	0.50	-2.54	-2.25
<b>Std. Dev.</b>	41.97	3.39	13.91
<b>Skewness</b>	3.09	0.70	2.96
<b>Kurtosis</b>	11.01	10.12	10.26
<b>Observations</b>	368	368	368

Table 2 provides descriptive statistics for the entire eight-year period while descriptive analysis for pre- and post-IFRS periods are shown on Table 3. Generally, Table 2 depicts that mean (median) of share price, earnings and book value for the entire periods are ₦23.90 (₦6.79), ₦1.46 (₦0.39) and ₦8.95 (₦3.56) correspondingly. Drawing from the standard deviation values of each of the variable, that is share price (₦41.97), earnings (₦3.39) and book value (₦13.91), it is very obvious that distributions of the data are widely dispersed among the companies sampled. This wide variability is also confirmed by minimum and maximum values of the three variables. It is an indication that there is a broad economic performance and position among Nigerian listed non-financial firms.

**Table 3: Descriptive Statistics of the Variables for Pre- and Post-IFRS Periods**

	Pre-IFRS Period (2008-2011)			Post-IFRS Period (2012-2015)		
	SPm	EPS	BVPS	SPm	EPS	BVPS
<b>Mean</b>	20.23	1.47	7.35	27.57	1.74	10.74
<b>Median</b>	7.37	0.40	3.38	5.24	0.39	4.27
<b>Maximum</b>	216.92	16.01	72.95	293.23	15.71	82.59
<b>Minimum</b>	0.50	-2.54	-2.25	0.50	-1.76	-1.81
<b>Std. Dev.</b>	32.44	2.74	11.37	49.54	3.19	15.73
<b>Skewness</b>	2.97	2.38	3.31	2.80	2.36	2.69
<b>Kurtosis</b>	13.47	10.15	16.67	11.24	8.76	10.69
<b>Observations</b>	184	184	184	184	184	184

As regards pre-IFRS period, Table 3 revealed mean (median) of ₦20.23 (₦7.37), ₦1.47 (₦0.70) and ₦7.35 (₦3.38) for the three variables in the order of share price, earnings and book value. The variables also demonstrate a wide dispersion of its distribution among sampled firms during the pre-IFRS period except earnings that is a bit mild with standard deviation value of ₦2.74 (share price, ₦32.44 and book value, ₦11.37). This dispersion is also a reflection of their minimum and maximum values. In the post-IFRS period, the situation is not quite different. Mean (median) of share price, earnings and book value are ₦27.57 (₦5.24), ₦1.74 (₦0.39) and ₦10.74 (₦4.27) respectively with corresponding standard deviation of ₦49.54, ₦3.19 and ₦15.73. A comparison between pre- and post-IFRS periods revealed general improvement in the economic position and performance of the sampled firms as well as their market equity values in the post-IFRS period using mean values. This is a reflection of growing economy and capital

market which was noted earlier by Umoren and Enang (2015) using listed banks in the Nigerian stock market.

However, untabulated degree of dispersion relative to the mean of the distribution (coefficient of determination) between pre- and post-IFRS data indicate slight reduction in degree of dispersion of earnings and book value while share price recorded a significant increase in the post-IFRS period. This implies that the degree of dispersion as regards the two accounting data used is less distributed among the sampled firms during IFRS period than it was under SAS-based accounting data. This might possibly be as a result of mandatory adoption of IFRS and its demands. Nevertheless, the distribution of the data generally revealed dispersion from gaussianity as mean and median values are wide apart from each other while skewness and kurtosis are far above 0.50 and 3.00 respectively. This suggests that sample distributions are generally positively skewed and leptokurtic. As such, sample data were transformed using their natural logarithm form.

### Inferential Statistics of the Price Valuation Models

Using panel least square regression model, relative and incremental value relevance of the variables employed were performed and discussed in this subsection. Hypothesis one was tested using relative measure why incremental value relevance metric formed basis for testing hypothesis two. However, natural logarithm regression model was adopted to carry out the inferential analyses as a result of the deviation of the data distribution from gaussianity.

### Relative Value Relevance Regression Analysis

In order to achieve statistical hypothesis one, relative value relevance measure of pre- and post-IFRS period were performed. The hypothesis is stated as follow;

**H<sub>01</sub>:** There is no significance difference between value relevance of accounting information of the Nigerian listed non-financial firms under IFRS and Nigerian local GAAPs.

Due to failure of the data to follow normal distribution, natural logarithm form of the data was used. Thus, standardised residual Jarque-Bera value of 0.439047 with corresponding p-value of 0.8029 were obtained using the transformed data. Since  $p > 0.05$ , the null hypothesis of normality of the transformed data cannot be rejected as the result suggest that sample distribution is not significantly different from the population distribution. Hausman specification test result indicates appropriateness of fixed effect model as the test results revealed Chi-Square statistic ( $\chi^2$ ) value of 19.055995 and p-value of 0.0001. Table 4 indicates non-multicollinearity among the variables as the correlation results is generally less than 7. Breusch-Pagan-Godfrey heteroscedasticity test generally revealed p-value of 0.4917 (with Obs\*R-square value of 0.472838), suggesting null hypothesis of homoscedasticity could not be rejected.

**Table 4: Pearson Correlation Matrix of the Variables**

	SPm	EPS	BVPS
SPm	1		
EPS	0.696**	1	
BVPS	0.490**	0.503**	1

\*\*. Correlation is significant at the 0.01 level (2-tailed).

The following models were used to examine the relative difference in the value relevance of the accounting information jointly and individually for the two periods. Model 1 is used to perform multivariate regression for pre- and post-IFRS periods why model 2 and 3 are used for univariate regression analysis for each of the two periods (i.e. pre- and post IFRS regimes). Results of the natural logarithm regression models are presented in Table 5.

$$\text{Model 1: } \ln SP_{it} = \beta_0 + \beta_1 \ln EPS_{it} + \beta_2 \ln BVPS_{it} + \varepsilon_{it}$$

$$\text{Model 2: } \ln SP_{it} = a_0 + a_1 \ln EPS_{it} + \varepsilon_{it}$$

$$\text{Model 3: } \ln SP_{it} = b_0 + b_1 \ln BVPS_{it} + \varepsilon_{it}$$

**Table 5: Relative Value Relevance Regression Results for Pre- and Post-IFRS Periods**

	Models 1				Model 2		Model 3	
	$\beta_1$	$\beta_2$	Adj.R <sup>2</sup>	F-Stat.	$a_1$	Adj. R <sup>2</sup>	$b_1$	Adj. R <sup>2</sup>
<b>Pre-IFRS Models</b>	0.597** (3.845)	0.583** (5.188)	0.306	39.593**	0.985** (6.745)	0.202	0.791** (7.725)	0.250
<b>Post-IFRS Models</b>	1.558** (6.894)	0.716** (5.090)	0.588	125.63**	2.379** (14.041)	0.528	1.408** (12.679)	0.477

\*\* denotes significance at 0.01 level. *t*-Stats are in parentheses (2-tail). Heteroscedasticity test was based on HAC consistent error estimation using Breusch-Pagan-Godfrey test.  $\ln SP_{it}$  is the natural log of share price of firm *i* at time *t* (March after the financial year-end),  $\beta_0$  is the constant term,  $\beta_1$  and  $\beta_2$  are the coefficients of earnings and book value in model 1,  $\ln EPS_{it}$  is the natural log of earnings per share of firm *i* at time *t*,  $\ln BVPS_{it}$  is the natural log of book value per share of firm *i* at time *t*,  $a_1$  is the coefficient of earnings per share in model 2,  $b_1$  is the coefficient of book value in model 3,  $a_0$  and  $b_0$  are constant terms for model 2 and 3 respectively,  $\varepsilon_{it}$  is the error term in each model, *t* indicates 2008 – 2015, 2008 – 2011 and 2012 – 2015 for model 1, 2 and 3 respectively.

Results of the relative measure for pre- and post-IFRS periods are as shown in Table 5. Regression results of model 1 as used for pre- and post-IFRS periods indicate that earnings and book value can jointly explain about 30.6% and 58.8% of variability in the share price of Nigerian listed non-financial firms for the two periods respectively. These results revealed an increment of almost twice of the explanatory power of the two variables in the post-IFRS regime. Nonetheless, the two models are significant at 0.01 level ( $p < 0.01$ , F-Statistics at the rejection region). This is an indication that relative value relevance of adopting IFRS in the Nigeria stock market is significantly higher than it was under Nigerian local GAAPs for listed non-financial companies in the Nigerian equity market. The coefficients of the two variables indicate significant increase for earnings per share between pre- and post-IFRS periods (i.e. from 0.597 to 1.558) with marginal increase for book value (i.e. from 0.583 to 0.716). This is a pointer that participants in the stock market value earnings more during the post-IFRS period than book value which are both significantly different from zero in the two periods ( $p < 0.01$ ; *t*-statistic at the rejection region).

Further investigation was made to unearth individual behaviour of the each variable as related to share prices using model 2 and 3 for the two periods. Model 2 showed that earnings per share alone is capable of explaining about 20.2% of variation in share prices of Nigerian listed non-financial firms in the pre-IFRS period but increased to 52.8% during post-IFRS period. The beta coefficient demonstrate the same improvement pattern during post-IFRS (i.e. 2.379 from 0.985 in the pre-IFRS period). Both the coefficient and model are significant at 0.01 level. The results

of univariate analysis for book value showed that its explanatory power over share price for this category of Nigerian listed firms increased from 25% in the pre-IFRS period to 47.7% during post-IFRS period. Also, its coefficient increased from 0.791 to 1.408 in the IFRS regime which are both significant at 0.01 level. By comparing the univariate results of the two variables, it is further established that earnings per share has higher explanatory power of share prices of the Nigerian listed non-financial firms than book value in the post-IFRS period. More importantly to the hypothetical statement, the two variables jointly and individually demonstrate higher coefficients and adjusted  $R^2$  after IFRS adoption than when preparation of financial reports were based on local Nigerian SAS. Therefore, these results provide basis to submit that participants (or investors) at the Nigerian stock market rely on both earnings and book value of listed non-financial firms to determine its share prices but much more after IFRS adoption. As such the null hypothesis that there is no significance difference between value relevance of accounting information of the Nigerian listed non-financial firms under IFRS and Nigerian local GAAPs cannot be accepted. Thus, findings based on this study is in line with the submission of Umoren and Enang (2015) who obtained higher relative value relevance of the two variables for listed Nigerian banks. It also corroborate findings by Karğın (2013) who noted that value relevance of accounting information has improved in the post-IFRS period among Turkish listed non-financial firms as well as increased value relevance reported by Alashi and Dumlu (2015) using Borsa Istanbul listed manufacturing firms. On the contrary, our findings is at variance with Schiebel (2007) who observed that German GAAP is statistically more value relevant than the one issued under IFRS.

### Incremental Value Relevance Regression Analysis

The thrust of the statistical hypothesis two is to unveil effect of IFRS adoption on value relevance of accounting information of Nigerian listed non-financial firms issued under IFRS. To achieve this, second hypothesis as restated below was raised.

**H<sub>02</sub>:** There is no significance effect of IFRS adoption on value relevance of accounting information of Nigerian listed non-financial firms issued under IFRS.

Therefore, modified price valuation model 4 was employed to test the hypothesis. The results as presented in Table 6 are based on standardised residual Jarque-Bera normality test value of 2.736713 (p-value = 0.2545) using the natural logarithm form of the data. This implies the use of logarithm regression model for incremental value relevance measure.

**Table 6: Incremental Value Relevance of Earning and Book Value**

Variables	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-0.659768	0.805729	-0.818846	0.4134
nlEPS	0.597330	0.147787	4.041839	0.0001
nlBVPS	0.583148	0.106940	5.453036	0.0000
P <sub>IFRS</sub>	0.227054	0.103563	2.192417	0.0291
P <sub>IFRS</sub> nlEPS	0.961068	0.280950	3.420785	0.0007
P <sub>IFRS</sub> nlBVPS	0.132883	0.183159	0.725504	0.4686
R-squared	0.474823			
Adjusted R-squared	0.467233			
F-statistic	62.56501			
Prob. (F-statistic)	0.0000			
Durbin-Watson stat	1.93951			



Drawing from Table 6, results of incremental value relevance regression model demonstrate that variables included in the modified price valuation model are capable of explaining 46.72% (Adjusted  $R^2$ ) of variability in share price. The model is significant ( $p < 0.01$ ; F-Stat. = 62.565), revealing fitness of the model with respect to the data used. The variables' beta are generally positive and significant ( $P < 0.05$ ) except interactive variable between post-IFRS and book value ( $p > 0.05$ ).

Since the focus of this test is to unearth possible significance effect of IFRS adoption on value relevance of accounting information of the Nigerian listed non-financial firms issued under IFRS using incremental metric, attention is accorded to interactive variables (i.e.  $P_{IFRSnlEPS}$  and  $P_{IFRSnlBVPS}$ ) along with the natural log of the other variables. The coefficients of nlEPS and nlBVPS are 0.597 and 0.583 respectively which are statistically significant at 0.01 (t-Statistics are at the rejection region). Also, it is also noted that beta coefficient of post-IFRS (0.227) is positive and significant at 0.05 level ( $t = 2.192$ ). Furthermore, interactive variables indicate positive and statistical significant coefficients of 0.961 for  $P_{IFRSnlEPS}$  and positive but insignificant beta of 0.132 for  $P_{IFRSnlBVPS}$ . These results suggest that both earnings and book value are significantly value relevant in the pre-IFRS period. However, value relevance of earnings increased in the post-IFRS period while value relevance of book value in the post-IFRS is reduced (but not negative) which is statistically insignificant. This is an indication that there is a reduced sensitivity in share price caused by book value of equity as earnings per share explains sensitivity in the share price more in the post-IFRS period. It therefore suggests that investors really showed improved interest in the use of earning accounting data over book value of equity of the Nigerian listed non-financial firms to predict share price after IFRS adoption.

This finding is in tandem with the results under relative measures as presented in Table 5. Thus, these findings provide basis for rejecting the null hypothesis that there is no significant effect of IFRS adoption on value relevance of accounting information of the Nigerian listed non-financial firms issued under IFRS. Therefore, IFRS adoption in Nigeria has positive and significant effect on earnings per share but statistical insignificant for book value. This finding is consistent with Kargın (2013), Umoren and Enang (2015), and Chalmers *et al*, (2011). But the finding negates submission by Khanagha (2011) in respect of their findings. Our findings also demonstrate converse of the submission by Söderlund (2010) and partly at variance with Bolibok (2014).

## SUMMARY AND CONCLUSION

The study was able to unearth impact of IFRS adoption on value relevance of earnings and book values of Nigerian listed non-financial firms. Sample of forty-six (46) firms were drawn based on companies with December 31 as financial year-end among other criteria. Panel data were sourced from the sampled firms for eight-year period, indicating four equal years for pre- and post-IFRS periods. Natural logarithm form of panel least square regression analyses were performed relatively and incrementally to understand impact of IFRS adoption on value relevance of the selected firms' accounting data. Descriptive statistics results indicated wide degree of dispersion among the variables used which slightly decline for earnings and book value in the post-IFRS period. In addition, mean value of the variables were generally higher during IFRS regime than it was under Nigerian SAS-based financial reports. Two hypotheses were raised and tested. The results generally revealed that, earnings per share is positively and

significantly more value relevant during IFRS regime (relatively and incrementally) which could be explained by the adoption of IFRS in the Nigerian stock market. Nevertheless, value relevance of book value of equity per share is relatively value relevant and positively significant but was incrementally insignificant during IFRS period.

Based on the results of various regression analyses performed, the study draws a conclusion that, earnings and book values of the Nigerian listed non-financial firms are relatively more value relevant to investors at the Nigerian stock market under IFRS regime, jointly and individually. This suggests that possible informative nature of IFRS and its resultant adoption in the Nigeria stock market has been able to impact positively and explain more about variability in share value of the listed firms. However, incremental value relevance analysis results revealed that this impact of IFRS adoption is significant and incrementally explained by earnings per share of the firms as positive contribution of book value is not significantly different from zero. This also suggest that, even though investors valued both earnings and book value more after IFRS adoption to determine share prices of non-financial firms at the stock market, incremental value in the share prices is not significantly contributed by book value of the firms. Thus, impact of IFRS adoption on value relevance among Nigerian listed non-financial firms is incrementally and significantly explained by earnings. Also, in consistence with signalling and EMH, findings of this study imply that information asymmetry should have been lessened while market efficiency improved as a result of IFRS adoption in the stock market.

In line with the submission of this study, we therefore recommend that Financial Reporting Council of Nigeria and NSE regulatory bodies as well as other accounting standards setting bodies and stock markets regulators across the globe should work in tandem to strengthen IFRS adoption and compliance by listed firms. This has a lot to offer to the market as well as the national economic stands through possible improved foreign direct investment. Nevertheless, the study suggest that future study should examining value relevance by using Easton and Harris (1991) return models. Also, other accounting data such dividend and cash flows from operation could be employed in the value relevance measure. In addition, future research in this area may think of examining quality of IFRS-based accounting information using other accounting quality measures other than value relevance such as accrual quality, predictability, income smoothing, earnings management etc. However, it should be noted that this study is inevitably limited to four years post-IFRS because of available data as at the time of this study. Therefore, prospective studies should extend the period of the study beyond four years post-IFRS as value relevance study is better examined under a longer period of time.

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