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International financial reporting standards (IFRS) and firm profitability

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Abstract
The growing need for accounting information across borders and the globalization of business activities as well as the observed diversity in national accounting practices accentuated the need for globally accepted financial reporting standards. This study is on the effect of international financial reporting standard on firm profitability in Nigeria. In order to achieve the objective of the study, the annual report of one hundred and four companies (104) which disclosed a comparative statement of both IFRS and NGAAP for the period under study were selected and analysed. Comparative data for the study were extracted from corporate annual reports and accounts of selected firms for the period 2012-2017. Firm profitability proxy by earnings per share (EPS) and return on asset (ROA) were extracted and analysed. In testing the research hypothesis, the relationship between IFRS and NGAAP is analysed using the ordinary least square (OLS) regression analysis. Gray's comparability index was also used for measuring the relative impact of IFRS adoption on profitability of Nigerian listed firms. The findings revealed that EPS and ROA are higher under the NGAAP than IFRS**.** Also, EPS and ROA have a positive relationship during IFRS and NGAAP regimes. Consequent upon this study, it was recommended that Users of financial statements need to distinguish accounting number changes caused by the transition to IFRS from those caused by changes in the business for proper understanding of what causes a particular change.

Keywords: IFRS, NGAAP, return on asset, earnings per share, and gray's comparability index

Introduction

The growing need for accounting information across borders and the globalization of business activities as well as the observed diversity in national accounting practices accentuated the need for globally accepted financial reporting standards based upon clearly articulated principles. Edogbanya and Kamardin (2014) [15] noted that globalization of capital market and internationalization has come to stay. The need for harmonization and single set of consistent high quality financial reporting standard has gained wide spread acceptance among policy makers, standard setters and preparers of financial statements. This need gave birth to the International Financial Reporting Standards (IFRS).

The journey to the development of IFRS commenced with the launching of the International Accounting Standards Committee in the wake of the 1972 World Accounting Congress (a five-yearly get-together of the international profession) after an informal meeting between representatives of the British profession (Institute of Chartered accountants in England and Wales – ICAEW) and the American profession (American Institute of Certified Public Accountants). A rapid set of negotiations resulted in the professional bodies of Canada, Australia, Mexico, Japan, France, Germany, the Netherlands, and New Zealand being invited to join with the US and UK to form the international body. The members of IASC in July 2000, voted to abandon the organization's former structure, which was based on professional bodies, and adopt a new structure beginning in 2001. This effort by the international standard setting body led to the formation of the International Accounting Standards Board (IASB). The IASB is an independent body that is solely responsible for establishing International Financial Reporting Standards (IFRS), including IFRS for SMEs. The IASB also approves new interpretations (Mackenzie *et al.* 2013) [32].

With the establishment of IFRS and the effort at harmonization of accounting practice across national jurisdictions, the global trend in the past decade has been for jurisdictions to adopt IFRSs directly or to converge local generally accepted accounting practice (GAAP) to IFRSs. The ability of IFRSs to meet the needs of the capital market has caused securities regulators to actively encourage this trend. Today, over 110 jurisdictions require the adoption of IFRSs for listed companies (Deloitte 2010) [14].

Nigeria has since July 28, 2010 outlined a roadmap for the adoption of the international financial reporting standards (IFRS) in Nigeria in view of the country's aim to become one of the fastest growing economies by the year 2020. By this Roadmap, January 2012 was approved as the effective date for the convergence of accounting standards in Nigeria to IFRS; and the Nigerian Accounting Standards Board (NASB) was mandated to take necessary actions to give effect to the decision. The NASB announced its implementation programme in which significant Public Interest Entities were directed to adopt the IFRS by January 2012 while other Public Interest Entities and Small and Medium-size Entities (SMEs) were required to implement the IFRS by January 2013 and January 2014 respectively (Agbor & Segun 2014) [3].

The global adoption of IFRS has inevitably increased the

scope and complexity of issues covered in IFRSs, the amount of implementation guidance, and the volume of disclosures. It has also resulted in changes in accounting figures. In the past, Nigeria has Statement of Accounting Standards (SAS) hereafter called the Nigerian Generally Accepted Accounting Principle (NGAAP) for preparing and reporting financial information. Although the conceptual basis and many of the general principles under NGAAP are similar to IFRS in certain respects, many differences still exist (KPMG 2010) [29]. These differences can impact figures presented in financial statements hence leading to differences in financial ratios computed under IFRS and NGAAP.

According to Ibiamke and Ateboh-Briggs (2014) [25], there are some debates among academics and practitioners that the adoption of IFRS can be detrimental to some countries if financial statement figures are negatively affected upon IFRS adoption thereby putting those country's companies in a competitive disadvantage in the global market. In the same vein, Ormrod and Taylor, (2004) [36] pointed out one of such consequences for contractual obligations of changing the methods of arriving at year end balances; they noted that there have been instances of companies needing to restructure their financing to ensure obligations can still be met when financial accounts are produced under IFRS for the first time. There is therefore a need for further research in this area of study to provide empirical evidence to guide the restructuring of organization's capital structure to meet their financial obligations. This study therefore became pertinent and timely to compare financial ratio obtained from annual reports prepared in line with the Nigerian GAAP and those prepared according to the provisions of International Financial Reporting Standards (IFRS).

The overall objective of this study is to empirically determine the impact of adoption of International Financial Reporting Standards (IFRS) on firm profitability. Specifically, this study seeks to

1. Determine the difference in earnings per share (EPS) resulting from the adoption of International Financial Reporting Standards (IFRS).
2. Determine the difference in return on asset (ROA) resulting from the adoption of International Financial Reporting Standards (IFRS).

To achieve the objectives of this study, the following hypotheses were formulated.

1. There is no statistically significant difference between earnings per share under NGAAP and earnings per share under IFRS.
2. There is no statistically significant difference between return on asset under NGAAP and return on asset under IFRS.

Literature Review

International Financial Reporting Standards (IFRS)

In 1973, the International Accounting Standards Committee (IASC) was created with the explicit intent to develop accounting standards for international use. The objective of the IASC was to develop and promote the use and application of International Accounting Standards or IASs (IASB, 2010) [24]. In the early years, IASs were not widely applied. A noticeable change however took place in 2001 subsequent to replacement of the IASC by the International Accounting Standards Board (IASB) along with the new name given to the standards – IFRS. The stated goal of the IFRS Foundation and the International Accounting Standards Board (IASB) is to develop, in the public interest, a single set of high-quality, understandable, enforceable and globally accepted financial reporting standards based upon clearly articulated principles (Mackenzie *et al.* 2013) [32]. IASB adopted the standards (IAS) developed by IASC and has since developed new standards now known as IFRS.

Features of International Financial Reporting Standards

IFRS is a principle-based set of accounting standards designed to improve the comparability of financial statements internationally.

According to Blanchette, Racicot & Girard (2011) [9], the main characteristics of IFRS include a principle-based approach, fair-value orientation, the concept of comprehensive income, the entity theory underlying consolidation, and improved transparency.

Principle-based approach

The principle-based approach of IFRS implies that the standards rely primarily on principles and specified desirable regulatory outcomes rather than detailed, prescriptive rules. This approach gives more importance to substance (over form) and allows management to exercise judgment discretion in application. In short, management has greater flexibility in selecting accounting methods and in estimating accounting figures when preparing financial statements. In turn, a rule-based approach offers less flexibility in aligning business objectives and processes with regulatory outcomes and forces specific treatments when precise criteria are met. For example, a standard on consolidation that is based on a general definition of control, such as "the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities" (IAS 27.4),is principle-based. Another standard that gives specific quantitative benchmarks, such as ownership of a majority voting interest of over fifty per cent of the outstanding voting shares (SFAS No. 94published by the FASB in 1987), is considered to be rule-based. The distinction is not always clear and some argue that many actual sets of standards are a mix of both models. For instance, Canadian

GAAP relies predominantly on principles but evolved gradually towards more rules (Chlala and Fortin, 2005; Fortin and Labelle, 2005). U.S. standards are generally referred to as rule-based (Zarb, 2006) [43].

Fair value accounting

Fair value accounting represents a departure from the traditional historical cost principle. IFRS puts a much greater emphasis on fair value than that rendered under earlier Nigerian GAAP. Yusuf & Nor (2015) [42] noted that Under IFRS most of the assets are measured at fair value with only few measurement on amortised cost or historical cost while, under NGAAP all assets are measured at historical cost. For instance, financial instruments for IFRS have been classified into four under IAS 39 as; (i) recognised at fair value on gain

or loss in profit or loss account, (ii) are measured at amortised cost for investments held-to-maturity, (iii) measured at amortised cost for loans and receivables, and (iv) measured at fair value gain or loss for available-for-sale financial assets recognised in other comprehensive income. Additionally, financial liabilities have been categories into two namely; (i) measured at amortised fair value on financial liabilities through profit or loss and, (ii) measured at amortised other liabilities.

Specifically, there are two types of accounting standards for financial institutions as banks and non-banks financial institutions in Nigeria, namely: (i) Statement of Accounting Standard 10 Part 1 (referred to as "SAS 10 Part 1") issued in1990; and (ii) Statement of Accounting Standard 15 Part 2 (referred to as "SAS 15 Part 2") issued in 1997. Because of the requirement to provide new development in non-banks financial institutions, SAS 15 Part 2 was issued even though banks to some extent perform similar activities to other financial institutions. Meanwhile, SAS 10 Part 1 and SAS 15 Part2 are adopted from IAS 30: disclosures in the Financial Statements of Banks and Similar Financial Institutions of 1987.

In general, fair value is mandatory in measuring transactions at initial recognition under IFRS. In some instances, items such as financial instruments held-for-trading and derivatives are required to be re-measured at fair value subsequently. In addition, many assets and liabilities can also be re-measured at fair value on an optional basis although this practice is not widespread.

Under IFRS, fair value accounting is seen as more relevant for the measurement of balance sheet items. However, one of the consequences of such a measure is represented by the increased volatility of profits due to the recognition of unrealized gains and losses. To avoid volatility of profits in the income statement while allowing fair value measurement in the balance sheet, the concept of comprehensive income was developed (Blanchette, Raclcot & Girard. 2011) [9].

Consolidation

The entity theory underlies the application of the consolidation technique in IFRS. It requires that assets and liabilities of subsidiaries be measured at their full fair value on the date of acquisition.

Consequently, minority interest (called non-controlling interest) is measured at fair value at the same date. This is a major difference compared with Nigerian GAAP which does not recognize the fair value adjustments related to minority interest.

In addition to the measurement issue, the entity theory has important implications on the presentation of minority interest. Under IFRS, minority interest is presented on the balance sheet within the shareholders' equity as the minority shareholders are considered partial owners of the consolidated entity.

Transparency

Transparency represents another major characteristic of IFRS. It relates to the assumption that markets are efficient and that all of the information communicated to users of financial statements is accurately and reliably incorporated in stock prices. This represents the qualitative characteristic of completeness (IASB, 2001) [21] which allows users, particularly investors, to make decisions based on all the relevant information. One of the consequences of completeness, though, is an overload of information as notes accompanying financial statements are numerous, complex and sometimes hard to analyse in their entirety. This study primarily relies on figures taken directly from the financial statements, except in a few situations where notes are necessarily relied upon.

IFRS and SAS compared

The erstwhile issuer of the Statement of Accounting Standard (SAS) in Nigeria, the Nigerian Accounting Standard Board (NASB) gave the first unified and professional outlook to the regulation of accounting profession in Nigeria in 1982when it was constituted as a board. The NASB, hitherto set up under the auspices of the Institute of Chartered Accountants of Nigeria (ICAN) was thence brought under government supervision by making it a component of the then Federal Ministry of Trade and Tourism in 1992 (ICAN, 2006). As a faction of a government parastatals, The NASB issued some standards which though, were not wholeheartedly followed by all players; serve effectively in providing a uniform basis for locally based companies and preparers of financial statements. The major setback of the NASB was the refusal of multinational companies to adopt the SASs as they considered it mere codifications of the extant International Accounting Standards (Nigeria's Financial Hub, 2011) [34]. Until the NASB act was repealed in 2011,it had 31 SASs in operation (FRCN, 2014). Notwithstanding the oversight role of the NASB, plethora of sharp practices among accountants brought about disdain to the revered profession of accounting in Nigeria (Sanusi, 2010; Otusanya & Lauwo, 2012) [39, 37]. Continual public outcry as well as the urgent need to adopt IFRS therefore necessitated the need for the enactment of the Financial Reporting Council of Nigeria (FRCN) in 2011.The Financial Reporting Council of Nigeria therefore operates to enable the strict adoption of International Financial Reporting Standards, majority of which is embedded with fair value accounting (Ball, 2006) [6].

The table below shows some of these differences.

Table 1: Differences between NGAAP and IFRS

No	Disclosures	NGAAP	IFRS
1	Fair value of Financial Investment Security	Classified as short term or long term investments	IAS39 fair value through profit and loss (held for trading) fair value at other comprehensive income (available for sale) at maturity and loans and receivables
2	Intangible assets	Part of property, plant and equipment	They are separated individually
3	Financial assets	Reported separately	IAS 39 classification as financial asset
4	Assets	Short term investments measured at market value,	All financial assets are to be measured at fair value except, loans and

		lower cost and at revalue amount or long term cost,	receivables unquoted equity instruments and held at maturity assets.
5	Liabilities	Deferred tax income measured or calculated under NGAAP carrying amounts of assets and liabilities	Measured at amortised cost. This consist of deposit form banks, customers deposit and borrowings account interest payable from IFRS carrying amounts of assets and liabilities
6	Net fees and commission	Credit fees classified to interest income	Accrued interest income classified using effective interest rate (EIR)
7	Short term investment	Recognised as part of trading income or losses in the income statement	Classified as held for trading, available-for-sale- fair value gains or losses on held for trading investments are recognised under net gains and losses on financial instruments
8	Foreign currency Translation	Differences are shown on the face of income Statements	Differences are shown a component of other comprehensive income
9	OCI	Not available	In addition to CI
10	Interest expenses	Lending fees borrowing from foreign financial institutions paid in advance or amortised	Classified as interest expenses
11	Net gains or losses-financial assets held for trading	Not categories as financial instruments	Held for trading (either for selling or repurchasing
12	Income tax expenses	Granted at concessionary rate no recognition for staff benefits or amortised	Amortised to staff expenses over loan life
13	Deposits	Stated as exclusive of all accrued interest payable	Financial liabilities amortised cost included in interest accrued as EIR from IAS 39
14	Fair value available for sale financial asset	Differences are shown on the face of income statements	Recognised in other comprehensive income and transferred to fair value reserve in statement of financial position

***Source*:** Yusuf & nor (2015)

The International Financial Reporting Standards and Financial Ratios

The differences in the measurement of accounting figures under IFRS and Nigerian GAAP may directly affect the numerator of ratio calculations, their denominator, or both. In cases where the difference in measurement affects only the numerator or only the denominator, the effect of changes is straightforward, easy to identify and to interpret. For example, the current ratio is higher under IFRS (everything else being equal) if current assets are higher but current liabilities remain unchanged. Identification and interpretation is less obvious in cases of numerous diverging effects on ratios. For example, a lower profit under IFRS will pull down the ROA by reducing the numerator but, at the same time, will pull it up by reducing the denominator.

Hudson (2014) [20] noted that there might be distinct accounting differences between IFRS and Nigerian GAAP that have opposite effects on a particular ratio. An example is the impact on the current ratio of higher current assets under IFRS due to an earlier recognition of revenues and receivables concurrent with higher liabilities due to the recognition of a finance lease liability.

IFRS are not applied with the express intent of altering financial ratios. That does not however allow professionals the luxury of being ignorant to the impact these new standards will have when implemented. The changes, often varied in nature, are of paramount importance not only for the managers who use them to help determine their strategy and course of action but for the investors and creditors as well who will in turn inject money into these enterprises. The fact that IFRS are far less rule based than traditional GAAPs allows a great deal of leeway in reporting and to some extent it provides a great deal of flexibility in the manner that data is displayed.

Various researchers have pondered these very ideas and spent extensive hours identifying significant factors and statistically checking their connections. Results from researchers such as Blanchette, Racicot and Girard (2011) [9], Lynch (2007) [31], and Lantto and Sahlström (2009) [30] have indeed shown that the adjustments made when reporting under a local GAAP, versus IFRS, tend to produce notable differences but given that each local accounting practice tends to have its own unique intricacies even these discrepancies are not uniform internationally.

For example, more than one financial ratio is affected when converting U.S. GAAP to IFRS. A few of the more notable variations that may occur include the current and quick ratios, due to the method of inventory utilized. Another example is the interest coverage ratio, since earnings before interest and taxes directly correlate with differences in the cost of goods sold. Prior to IFRS changeover, regression analysis of Canadian GAAP and IFRS showed high volatility between the two regimes due largely to differences in the application of fair value accounting. There were significant differences in the values of ratios such as current and quick ratios, debt, alternative-debt and equity ratios, interest coverage, fixed-charge and cash-flow coverage, return on assets (ROA), comprehensive-ROA and price-earnings related ratios (Blanchette, Raclcot & Girard. 2011) [9].

Theoretical Framework

Agency Theory

Agency theory is concerned with resolving the problems that can occur in agency relationships (Jensen and Meckling, 1976). They define agency relationship as a contract under which the owners of the organization (principal(s)) engage the manager (agent) to perform some service on their behalf. Under this arrangement, the owners delegate some decision making authority to the manager. It is presumed that both parties are utility maximizers, with varying philosophies and this could result in divergent and misaligned interest between them. Owners' would want to maximize net present value of firm while the managers would want to maximize utility, of

which income is part. Most cases, the agent will not always act in the best interests of the principal. The agents could also hide information for selfish purpose by non-disclosure of important facts about the organization (Barako, Hancock & Izan 2006) [8]. Owners face moral dilemmas because most times they cannot ascertain or evaluate the decision made by their agents (Barako 2007) [7]. This conflict of interest results to "agency problem" also known as "principal-agent problem" whose resolution incurs agency costs (Al-Shammari, 2005) [4]. Jensen and Meckling (1976) acknowledged that agency problem is common to all organizations and it exists in all corporative efforts at each level of management in firms. This includes public organizations, private organizations, and non-for-profit organizations such as schools, hospitals, and foundations, and even governmental enterprises and bodies such as the federal, state and local government. Jensen and Meckling (1976) focused exclusively on the positive aspects of the agency relationship as it applies to corporations. That is how to structure the contractual relation between the owner and manager to induce the manager to make choices which will maximize the owner's welfare, given that uncertainty and imperfect monitoring exist. Agency theory has a direct bearing on the research topic. In this research, the adoption of IFRS presents an excellent opportunity to apply positive agency theory. This is premised on the fact that managers (agents) through the use of global best practices can provide high quality financial report for the users of the information.

Gray's Comparability Index

The attempts to compare financial information obtained by applying different rules to the same events and transactions are numerous. In this sense, various indexes were created that would measure the degree of comparability between data applicable to different referential standards. An important source of data to study financial information comparability consists in the multiple reporting of companies listed on several stock exchanges (Weetman & Gray, 1990) [41]; to all these, was added either information restated by financial analysts (Gray, 1980) [18], or simulations of implementing some accounting rules. The instruments to assess comparability and the difference between financial data obtained by either applying different accounting policies or through accounting harmonization are very diverse: ranging from Gray's conservatism index (Gray, 1980) [18], to the H index, the I index and the C index, or the T index, to an entropy or a heterogeneity index (Istrate 2013) [27].

Prior research on comparative GAAP has mainly focused on the differences between a specific domestic set of accounting standards and either IASs or US GAAP. Several studies have used Gray's (1980) [18] index of comparability (Manzano, Conesa & Clavel 2006). This index was introduced to compare the practices of measurement of the companies' earnings of different countries. This index has since been used in a number of studies to compare net income prepared under different financial reporting standards (Weetman and Gray, 1990; Adams, Weetman, & Gray 1993; Cooke, 1993; Hellman, 1993; Norton, 1995) [41, 3, 12, 19, 35].

Gray's index of comparability was employed in this study to compare the financial ratios obtained from NGAAP financial statements and IFRS financial statements.

Empirical Review

Abdul-Baki, Uthman & Sanni (2014) [1] studied the effect of IFRS adoption on the performance evaluation of a case firm using some financial ratios selected from four major categories of financial ratios. The study was conducted through comparison of the ratios that were computed from IFRS based financial statements and Nigerian GAAP based financial statements. A One-Sample Kolmogorov-Smirnov Test was conducted to test for data normality. Mann-Whitney U test was employed in testing whether significant difference exists between the pair of ratios when the normality test showed a non-normal distribution of the data set. The result of the Mann-Whitney U test showed that there is no significant difference between the pair of ratios at 5% level of significance. It was concluded that the disclosure of IFRS compliant set of financial statements was not attributable to higher performance evaluation, through ratios, of the case firm. Rather, such disclosure could have been motivated by the capital needs theory or signalling theory.

Punda (2011) [38] examined the impact of IFRS adoption on key financial ratios under common law regimes for entities listed in the UK. The study contributes two novel insights to the debate: First, despite the fact that IFRS and UK GAAP are similarly shareholder-oriented – conversion from UK GAAP to IFRS leads to substantial differences in key financial ratios. Second, these differences in the UK are mostly driven by increase in net profit and current liabilities as well as decrease in equity.

Das (2014) [13] studied the impact of International Financial Reporting Standards (IFRS) adoption by Indian firms on Activity Based Ratios. The study employed an innovative design known as “same firm-year” research design. Gray’s index was used to find the impact of IFRS Adoption on Activity Based ratios of six Indian companies while paired sample t-test were used to test the statistical significance of the differences in mean between ratios under IFRS and Indian Generally Accepted Accounting Principles (IGAAP) respectively. They found that IFRS adoption has caused a negative impact on most of the Activity Based ratios of Indian firms, but the impact was not statistically significant and through t-test, it was found that there is no difference between IGAAP and IFRS.

Arina (2014) [5] examined the effect of adoption of International Financial Reporting Standards (IFRS) on Canadian Publicly Accountable Enterprises (PAEs), specifically their external financial reporting compared to Canadian Generally Accepted Accounting Principles (Canadian GAAP) using reported financial ratios of Canadian Banking companies, which will be tested for the statistically-significant differences between Canadian GAAP and IFRS to determine the impact on liquidity, leverage, profitability, and cash flows the change from Canadian GAAP to IFRS. Overall, the results indicated that there are no statistically significant differences between IFRS and CGAAP means and medians of financial ratios. However, the IFRS conversion did cause significant differences of the leverage ratios under IFRS and CGAAP. The statistical differences were found between medians of IFRS and CGAAP of equity ratios and means of equity and debt ratios.

Methodology

Research Design

This study employs an innovative design known as "same firm year" research design (Ibiamke & Ateboh-Briggs (2014) [25] wherein the study document how IFRS adoption changes key financial ratios of Nigerian listed firms. Same firm-year research design is a design that varies GAAP while holding the sample composition and the time period constant. Hung and Subramanyam (2007) [21] refer to this "same firm year" research design as a powerful one, since it controls for cross sectional and time series differences in our population. This method allows the comparison of two different sets of accounting standards- local accounting standards versus IFRS, for the same firm years. This is made possible because IFRS 1 First-time Adoption of International Financial Reporting Standards (IFRS) requires that when a firm adopts IFRS, it must provide a reconciliation of its financial statement based on local standards to that based on IFRS for the last year the firm applied local standards (denoted as the reconciliation year). Because our research design holds constant all the other aspects of a firm's institutional environment, any difference in the financial ratio across the two sets of accounting standards is attributed to the mandatory IFRS adoption.

For the purpose of this study the population comprise of all public listed companies on the floor of the Nigeria Stock Exchange (NSE) in 2012 which is the approved date by the FRCN in Nigeria for the adoption of IFRS for public interest entities. All one hundred and ninety three (193) companies constituted the population of study; however the annual report of one hundred and four companies (104) which disclosed a comparative statement of both IFRS and NGAAP were available in the library of the Nigeria Stock Exchange, fact books and websites of both NSE and the companies. The rest were either unavailable or they failed to disclose the comparative statement of both IFRS and NGAAP.

We calculate ratios based on figures obtained from financial statements that are constituted according to the two sets of accounting standards (NGAAP and IFRS) for the same year. Gray's comparability index was used for measuring the relative impact of IFRS adoption on profitability of Nigerian listed firms. The statistical tool is good for use in this regard because it is set to compare financial ratios under two separate GAAP regimes consistent with our work objectives. The index is expressed mathematically as:

Gray's index of comparability (IC)

$$= 1 - \frac{IFRS\ Numbers - NGAAP\ Numbers}{IFRS\ Numbers}$$

The result interpretation will be done in the following manner:

- IC is 1 when the two sets of standards result in the same value;
- IC is higher than 1 when the IFRS values are higher than those pertaining to the former standards;
- IC is lower than 1 when the IFRS values are lower than those obtained by applying the former standards (Istrate, 2013) [27].

For result interpretation we resort to Gray (1980) [18], who sets a conservatism degree scale applying to the various entities, depending on the index value: below 0.95; between 0.95 and 1.05 and over 1.05.

The interpretation may be done as follows

Conservatism (pessimism – the IFRS more prudent than the former standards): for an index < 0.95, with three subdivisions, bellow 0.50; between 0.50 and 0.74; between 0.74and 0.94;

Neutrality: for index values between 0.95 and 1.05; here Gray (1980) [18] proposes 3subdivisions: between 0.95 and 0.99; 1 and between 1.01 and 1.05;

Optimism (less conservatism – the IFRS less cautious than the former standards), for an index over 1.05, with the same number of subdivisions: between 1.06 and 1.25; between1.25 and 1.50 and over 1.51.

Another problem of the index is that the index does not show whether or not the difference if any between the two standards is significant. To overcome the first problem this study will exclude the extreme values (outliers) that is, if the value is lower than -2.0 and higher than +4.0. This means that the researcher will exclude cases where a financial ratio under IFRS is 300 per cent less or more than that under NGAAP (Tsalavoutas 2009).

A paired sample t- test was used to test for the statistical significance of the differences the means values. The decision rule is to reject the null hypothesis if the calculated (t) value falls outside the critical values at 95% level of significance.

Finally, the relationship between IFRS and NGAAP ratios is analysed using the ordinary least square (OLS) regression analysis. The aim of the OLS Regression analysis was to study the extent to which IFRS ratios can be explained by the corresponding NGAAP ratios and to examine the degree of relationship between the two sets of ratios. Financial ratios should be identical if there is no difference between IFRS and NGAAP. But where the adoption of IFRS alters accounting figures then it will also alter financial ratios. A model was formulated to establish a relationship among the variables.

The empirical model is specified as follows:

$$IFRS_{ft} = f(NGAAP_{ft})$$

The full specification of the regression equations using the composite responses of respondents is as follows

$$IFRS_{ft} = \alpha_0 + \alpha_1 NGAAP_{ft} + \mu_J$$

Variable Definitions

$$IFRS_{ft} = IFRS\ ratio\ for\ firm\ f\ at\ time\ t$$

$$NGAAP_{ft} = IFRS\ ratio\ for\ firm\ f\ at\ time\ t$$

$$\alpha_0 = constant(intercept)$$

$$\alpha_1 = coefficient\ of\ NGAAP$$

$$\mu_J = error\ term$$

Table 1: Descriptive Statistics of Profitability ratios and their Gray's Comparability Index

	EPS			ROA		
	IFRS	**NGAAP**	**INDEX**	**IFRS**	**NGAAP**	**INDEX**
Mean	1.11779	0.44530	1.08166	0.00580	0.01592	1.14054
Median	0.57000	0.62602	1.00000	0.02460	0.03135	1.01101
Standard Deviation	16.07408	23.92609	7.01944	0.16786	0.14953	6.06334
Minimum	-92	-163.4639	-34.1509	-1.16870	-0.92424	-27.17363
Maximum	80	86.5285	57.2074	0.34	0.34	49.42
Count	104	104	104	104	104	104
Increase			49(47%)			44(42%)
Decrease			45(43%)			60(58%)
NO Change			10(10%)			0(0%)

***Source*:** Researcher's Computation using MS Excel, 2018

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913[a]	.834	.832	6.58051033
a. Predictors: (Constant), earnings per share (NGAAP)				

***Source*:** Researcher's Computation using SPSS version 20 software, 2018

Table 3: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.844	.645		1.308	.194
	earnings per share (NGAAP)	.614	.027	.913	22.640	.000
a. Dependent Variable: earnings per share(IFRS)						

***Source*:** Researcher's Computation using SPSS version 20 software, 2018

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.695[a]	.483	.478	.12131266
a. Predictors: (Constant), return on assets (NGAAP)				

***Source*:** Researcher's Computation using SPSS version 20 software, 2018

Table 5: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.007	.012		-.554	.581
	return on assets NGAAP)	.780	.080	.695	9.757	.000
a. Dependent Variable: return on assets (IFRS)						

***Source*:** Researcher's Computation using SPSS version 20 software, 2018

Table 4.1 shows that EPS and ROA are higher under the NGAAP than IFRS. The mean Gray's comparability indexes are: EPS (1.08166) and ROA (1.14054). The same result is obtained from the median whose values are: EPS (1.0) and ROA (1.01101). According toGray (1980) [18], an index of above +1.0 indicates that NGAAP is more conservative than the IFRS while an index value below +1.0 depicts the opposite. From the table, it can be seen that out of the 104 firms studied, 49% and 42% experienced an increase in the EPS and ROA respectively while 43% and 60% experienced a decrease in their EPS and ROA respectively. The median value of less than +1.0 in all the aforementioned profitability ratios additionally suggest that more companies are affected negatively by the transition to IFRS.

The result of the regression analysis in table 4.2.6 show EPS with a coefficient value of 0.614 and ROA with a coefficient value of 0.780 have a strong positive relationship between IFRS and NGAAP. This means that a unit change in the value of EPS under NGAAP will lead to an increase of 0.844 and an increase of 0.614 in EPS under IFRS. Likewise, a unit change in the value of ROA under NGAAP will lead to a decrease of 0.007 and an increase of 0.780 in ROA under IFRS. The relationship is represented by the equation below.

$$IFRS(EPS) = 0.844 + 0.614NGAAP(EPS) + \mu_J$$

$$IFRS(ROA) = -0.007 + 0.780NGAAP(ROA) + \mu_J$$

The coefficient of determination R^2 is the proportion of variability in a data set that is accounted for by a statistical model. Tables 4.3 and 4.5 show the value of R^2 was 0.913 for EPS and 0.695 for ROA. This implies that about 91% and 69.5% of the variations in EPS and ROA under IFRS could be attributed to the value of the ratios under NGAAP while about 9% and 30.5% could be attributed to other human and socioeconomic variables that are capable of affecting firm's profitability.

The null hypotheses formulated for this study was tested using the paired sample t-test. The results shown in tables below will be interpreted based on the test procedure specified in 3.6.

Table 6: Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	earnings per share(IFRS)-earnings per share (NGAAP)	.672115	11.330	1.111031	-1.531352	2.8755832	.605	103	.547

***Source*:** Researcher's Computation using SPSS 20 software, 2018

Table 7: Paired Samples Test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	return on assets (IFRS)-return on assets (NGAAP)	-.0101273	.125126	.01226958	-.03446	.01420651	-.825	103	.411

***Source*:** Researcher's Computation using SPSS 20 software, 2018

The t-test of paired sample for the statistical significance of the difference of means provided the following t values: EPS (t= 0.605) and ROA (t= -0.825). Because the critical value of t (1.984) at 95% confidence level and 103 degrees of freedom is more than the calculated t, the null hypothesis is accepted. The mean value of profitability ratios does not differ significantly after IFRS adoption.

Conclusion and Recommendations

This study has examined the extent of changes in firm profitability when they were converted to IFRS. The study made use of an innovative design known as "same firm year" research design. Comparative reports prepared under both IFRS and NGAAP for one hundred and four companies (104) were used for the study. The criterion for selection of sample was on the basis of availability of data. The financial ratios used for the study were profitability ratios (earnings per share and return on assets) for accounting figures under both IFRS and NGAAP. The adoption of IFRS by listed entities in Nigeria has affects firm profitability. These changes in firm profitability are however observed to be divergent due to the fact that IFRS is more flexible than NGAAP. The results also showed that statistically, the differences between both standards are not significant.

Based on the findings of this study, the following recommendations were made.

1. Users of financial information should be mindful of the new feature of financial statements and their implication for decision making.
2. Comparing ratios based on IFRS figures with those based on NGAAP is not fully appropriate. Users of financial statements need to distinguish accounting number changes caused by the transition to IFRS from those caused by changes in the business for proper understanding of what causes a particular change.

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