CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Accounting standards are statements of agreement by society concerning the treatment of events and transactions in the financial statements of relevant entities (Asechemie, 1996, p.22). In Nigeria, there was a body, known as the Nigerian Accounting Standards Board (NASB) that developed and issued accounting standards, known as the 'Statement of Accounting Standards' (SAS). However, in 2012 fiscal year, Nigeria adopted and implemented the international accounting standards. To allow for effective implementation, the NASB was restructured into the Financial Reporting Council of Nigeria (hereafter, 'the Council').

Formally, the International Accounting Standards (IAS) are formulations of a body, known as the 'International Accounting Standards Committee' (or, simply, the 'Committee') and came into existence in 1973. The Committee issued IAS No. 1−41 (hereafter, the 'old IAS'); then, in 2001, this Committee was restructured into the International Accounting Standards Board (IASB). This new body, adopted the old IAS and revised, extended or modified them. The new accounting standards issued by this new body constitute the 'International Financial Reporting Standards' (IFRS). They comprise the old IAS, the revised old IAS, and the new accounting standards issued by the IASB. Under this new structure, the IFRS Foundation oversees the mode of operations of the IASB.

The IFRS are principles-based, suggesting that preparers of financial statements need to interpret, examine the circumstances, and select a choice. Simply, IFRS accounting policies have several alternatives for different circumstances so that preparers of financial statements must

select an appropriate choice based on the circumstance of the transaction. However, they are carefully developed to reveal a company's economic position and performance. So, irrespective of the accounting choice that a preparer of the financial statements select, the underlying economics of the firm is revealed; moreover, the circumstance under which an accounting choice is selected must be disclosed. Specifically, the IFRS accounting policies address measurement, valuation, presentation and disclosures but all of these relate to the underlying economics of the company, not corporate social responsibility disclosures. The United Nations, through a group of experts, develops accounting standards that address corporate social responsibilities, and Nigeria has also adopted them since 2008 ('Nigeria First', 2008). Even before this time, the Nigeria Company Law, known as the Companies and Allied Matters Act (CAMA), requires companies to report on corporate social responsibility. This study is concerned with both accounting standards—those developed by the IASB and the United Nations.

During the regime of the NASB, the modus operandi was to spot circumstances, consider the perverse behaviour of businessmen in Nigeria (that is culture), the comprehension skills of readers of financial statements, and peculiarities of the Nigerian economy, and recommend an accounting choice among those provided in the old IAS. In blunter terms, Nigerian domestic accounting standards were some adaptation of the old IAS before the adoption of the IFRS in 2012. However, when Council took over from NASB, it chose not to adapt but to adopt. So, in essence, the study is comparing the adapted old IAS, which reflects the cultural and economic development of Nigeria, with the IFRS, which fails to take into cognisance the peculiarities of the economy or the culture. This state of affairs may sound unsatisfactory but this is the backcloth of the study and must be borne in mind to appreciate the meaningfulness of the results

and the recommendations thereon. It is not unlikely that the NASB would have adapted the IFRS if not the formal declaration of adoption, but nothing debar the Council from adapting. In fact, the Financial Reporting Act (FRC Act, 2011) allows adaptation. The mandate given to Council is to ensure consistency with the requirements of the IFRS accounting policies, which implies that Council is to develop and issue domestic accounting standards for the nation but without compromising the IFRS. There is a due process in the Act, which Council must follow to formulate and issue domestic accounting standards. Whether the choice of Council to adopt without adjustment is representative of the cultural developments for which accounting in Nigeria must catch up with is a matter for debate, which is better thrown open at this time. Nihilism or value judgement would unavoidably be involved in this debate but what is important is whether a greater number of people think that this modus operandi sustains the cultural and economic development of the nation.

Moving on, at adoption, all companies listed on the Nigerian Stock Exchange were mandated to restate the accounting amounts in the 2011 financial statements, which had been prepared using Nigerian domestic accounting standards, to IFRS accounting amounts. Thus, different financial statements were prepared from the same set of transactions but under different accounting rules or accounting standards. This intervention or event provides the research setting to embark on the study. However, there are concomitants variables operating within this background that can supervene to distort or suppress the results of the investigation. First, a strong enforcement of the IFRS accounting policies is a sine qua non to obtain valid, or at least reliable, results. The purpose of enforcement is compliance, and compliance is the responsibility of the accountants who prepare the financial statements for management but whether they are qualified and

experienced to apply the new IFRS is an important matter. Educational institutions in the country (universities, polytechnics, and colleges of education) offer formal knowledge of accounting to individuals who choose the accounting profession. In addition, two main professional bodies were licensed to train accountants for the nation: (1) the Institute of Chartered Accountants of Nigeria (ICAN Act, 1965) and (2) the Association of National Accountants of Nigeria (ANAN Act, 1993). The Council is the institution responsible for the enforcement of the IFRS accounting policies. At present, the Council enforces compliance through licensed professionals in independent practice, who prepare the financial statements for management. Generally, institutional enforcement is 'arm-chair enforcement'; the real monitors of compliance are the external auditors. In some cases, they assist company's accountants to learn complex standards and even set up their accounting system so as to prepare IFRS-compliant financial statements (Brown & Tarca, 2005). Hodgdon, Tondkar, Adhikari and Haress (2009) find that audit firm size is positively related to IFRS compliance. Mısırlıoğlu, Tucker and Yükseltürk (2013) find that audit identity influences disclosure compliance. Generally, the big audit firms have more informative, experienced, and analytical staff to monitor compliance with accounting standards. Moreover, the judicial system needs to be efficient for a violation to be actionable. The rule of law (that is a country's law and order tradition) and the integrity of the legal environment characterise an efficient judicial system (La Porta, Lopez-De-Silanes, Shleifer & Vishny, 1998). A country is either of common law or civil law, and the view expressed in the literature is that institutional enforcement is stronger in common law countries (Hope, 2003; Gaio, 2010). The 'common law system' is based on precedents from judicial decisions (*stare decisis*—stand by the things decided) whilst the civil law system is based on rules which are continually updated to specify all matters capable of being brought before a court (La Porta, Lopez-De-Silanes, Shleifer

& Vishny, 1998). Though Nigeria is a common law country by British affiliation, there is no reason to suppose that equity is associated more with precedents than rules which define the tactics of the game. Thus, the strength of institutional enforcement and efficiency of the judicial system are background factors that must be considered when evaluating the results of this study. However, a large number of companies in the sample were audited by the Big 4, and when it is considered necessary to detect the effect of audit identity on the results, this variable is included in the design. Thus, the enforcement variable is not much a suppressor or distorter to the results.

This study is designed to investigate the quality of domestic accounting standards and the International Financial Reporting Standards (IFRS). The study also investigates the accounting amounts in the annual financial statements prepared using the domestic accounting standards on one hand and the IFRS accounting policies on the other hand. The 'accounting amounts' are the aggregate assets, liabilities, equity and income (including their ratios) reported in annual financial statements of companies listed on the Nigerian Stock Exchange (hereafter, sometimes, 'the financial statement elements'). Furthermore, the study investigates compliance with the corporate social responsibilities disclosures of the United Nations and in the CAMA. Specifically, the study investigates the IFRS adoption effect on the magnitude of the accounting amounts, the impact on the distributional forms and stability of the financial ratios, the value relevance of the accounting amounts and earnings management under both accounting standards, the adoption effect on the national income statistics, capital maintenance in the IFRS accounting policies, and compliance with corporate social disclosure under both regimes.

1.2 Statement of the Problem

An accounting change can occur owing to new problems, major developments in an economy, perverse behaviour of businesspersons (culture), or the emergence of new categories of assets and liabilities resulting from societal values (Asechemie, 1996, p.196). The NASB had always sought better accounting methods to respond to the challenges of new problems and cultural and economic developments of Nigeria. The only phenomenon in Asechemie's theory of accounting change that is completely lacking in Nigerian domestic accounting standards is the new category of assets and liabilities introduced by the IASB. Therefore, whether the emergence of new categories of assets and liabilities affects the aggregate assets, liabilities, equity, income and ratios, is an empirical question that ought to be detected. Moreover, the IASB requires that the assets and liabilities be valued at fair value. This suggests that assets and liabilities that were hitherto valued at historical cost are now to be valued at fair value. This shift from historical cost to fair value can change the distributional form and stability of the financial ratios because when some components of a financial ratio are measured at historical cost (for example, assets in the balance sheet) and others at current cost (for example, revenue and expenses in the income statement), the distribution of the ratio tends to be skewed and unstable, but when all components of a ratio are measured at current cost, the distribution would tend to be normally distributed and stable overtime. Thus, it ought to be detected whether the adoption of IFRS affects the distributional form and stability of financial ratios.

Moreover, Iyoha (2011) observes that the management of companies operating in Nigeria manipulate earnings to cover up poor cash flow from operations (a phenomenon known as 'earnings management'). The adoption of the IFRS accounting policies suggests, therefore, that

earnings management would be less, or that market participants would place higher value relevance on the accounting amounts. If this inclination is correct, then it ought to be detected whether the adoption of IFRS accounting policies would reduce earnings management and increase market value relevance.

Furthermore, it is believed that the IFRS Foundation does not take sufficiently into account the concept of capital maintenance (Jermakowicz, 2004; Bloom, 2011; Strampelli, 2011) due to fair value accounting. The main points raised in the literature are that companies might distribute dividends from fair value profit, and fair value accounting is subjective. Financing dividends from fair value profit or gain is not in consonance with the capital maintenance concept which requires that dividend be paid out of operational profit. Financing dividends by fair value profit does not protect creditors; it is even exploitative of shareholders when the amount of dividend paid is influenced by fair value loss. It may be argued, however, that fair value profits or losses do not affect or alter the cash position of a company but if a company has sufficient cash to back up profits, management might be tempted to pay dividends that are financed by unrealised profit, hoping that such an action will elevate their stock prices (*cf*. Bloom, 2011). The IASB believes that this matter cannot be handled by the accounting profession alone (IASB Speech, 2015). If, however, this argument is to be excused, then fair value accounting practice should be objective. In addition, management should demonstrate that the amount of capital claimed to have been maintained agrees with managerial strategies. In concrete terms, the inactiveness of the IASB can be excused if there is objectivity in fair value practice and management has shown that capital maintained agrees with operational strategies. Therefore, whether fair value gains/profits influence dividend distribution, whether management's claim of capital maintenance aligns with

managerial strategy, and whether management is objective in the practice of fair value accounting is an empirical question that ought to be answered.

Moving on further, Nigeria is the country in Africa with the highest economic growth ('BBC News', 2014). Economic growth is based on national income statistics (for example, gross domestic product), and accounting provides the data for national income accounting, for example, the value added of each firm is the contribution of each firm to economic growth or the gross domestic product (Asechemie, 1996, p.144). Therefore, whether the adoption of the IFRS accounting policies increase or decrease the gross domestic product (GDP) of Nigeria is an empirical question that ought to be answered. More to this point, the IFRS accounting policies consider issues of corporate social disclosures outside the financial statements (IFRS Foundation, 2014, p. A593), but the CAMA and the United Nations accept social disclosures as elements of corporate financial reporting (Schedule 5, part III, CAMA; United Nations Conference on Trade, Aid and Development [UNCTAD], 2005). The United Nations has used a group of experts to develop accounting standards for corporate social responsibility, known as the 'International Standards on Accounting and Reporting' (ISAR), and Nigeria has also adopted them (*see* 'Nigerian First', 2008). Therefore, it ought to be detected whether companies comply with the corporate social disclosure requirements of the United Nations and the CAMA despite the declaration by the IFRS Foundation. This research assignment is important because the Council never took responsibility to enforce compliance so that even external auditors are under no obligation to ensure compliance.

1.3 Objectives of the Study

The overall aim of the study is to provide empirical evidence which either justifies the holistic adoption of the IFRS or the need to adapt the IFRS to suit the cultural and economic development of Nigeria. This objective is significant because Larson (1993) finds that African countries that adapt the IFRS experienced higher economic growth than those that adopt the IFRS. The specific objectives are:

1. To ascertain whether an accounting change due to creation of new categories of assets and liabilities affects the aggregate assets, liabilities, equity, income and their ratios in a country that adapted the old IAS.
2. To learn whether the shift from the historical cost to fair value leads to temporal stability and normal distribution of financial ratios.
3. To provide the value relevance attributable to Nigerian domestic accounting standards and the IFRS, and hence concludes on which is higher.
4. To learn whether IFRS adoption leads to less earnings management using firms in Nigeria where earnings management has been an issue in the accounting profession.
5. To learn whether the codification of fair value accounting has reduced subjectivity, whether fair value losses and profits influence dividends distribution, and whether managerial claim of capital maintenance aligns with managerial strategies.
6. To learn whether the adoption of IFRS increases or decreases the GDP of Nigeria.
7. To learn whether companies comply with the CAMA and the United Nations corporate social disclosure requirements despite the IFRS declaration that they are outside the financial statements.

1.4 Research Questions

The fundamental questions that trigger this study are as follows.

1. What are the adoption effects of IFRS accounting policies on the financial statement elements, their ratios and the accounting measurement paradigm?
2. What are the adoption effects of IFRS accounting policies on the distributional form and stability of the financial ratios?
3. What is the adoption effect of IFRS accounting policies on value relevance of accounting information to market participants in Nigeria?
4. What is the adoption effect of IFRS accounting policies on earnings management in Nigeria?
5. What is the adoption effect of the IFRS accounting policies on the capital maintenance concept in the accounting profession?
6. What is the adoption effect of the IFRS accounting policies on the national income statistics of Nigeria?
7. What is the adoption effect of the IFRS accounting policies on compliance with the corporate social disclosure requirements of the CAMA and the United Nations?

1.5 Statement of Hypotheses

The structural hypotheses of the study are expressed to conform to the scientific method of negation.

1. The transition to IFRS does not affect the financial statement elements, the ratios and the conservatism paradigm.
2. The distributional forms and stability of the financial ratios do not differ under Nigerian domestic accounting standards and the IFRS.

3. There is no significant difference between the value relevance of the accounting amounts under Nigerian domestic accounting standards and the IFRS.
4. Earnings management under Nigerian domestic accounting standards and the IFRS do not differ significantly.
5. IFRS accounting policies do not impair the capital maintenance concept in the accounting profession.
6. The value added of each firm to the gross domestic product does not differ significantly under the Nigerian domestic accounting standards and the IFRS.
7. The voluntary declaration of the IASB on corporate social disclosure does not affect compliance with the requirements of the CAMA and the United Nations.

1.6 **Significance of the Study**

The IASB has emphasised the need to understand the impact of IFRS as they are adopted in particular regions (IASB, 2004, par. 93) because economic and political institutions do not differ significantly within a region. Nigeria is a prominent country in Africa; in fact, it is the country with the highest economic growth in Africa (‘BBC News’, 2014). Therefore, the study is significant. First, on the adoption effect of the IFRS on the financial statement elements and their ratios, the study helps the International Accounting Standards Board (IASB) to understand the aspect of its accounting innovation that is most influential in Nigeria. This is so because the study has identified the emergence of new categories of assets and liabilities as the mechanism that is entirely new to the accounting profession in Nigeria. Second, the investigation on the adoption effect of the IFRS on the distributional form and stability of financial ratios is practically important to financial analysts. When analysts use financial ratios to compare the

economic position and performance of a firm within an industry, they assume that the distributions of the financial ratios approximate a normal distribution. Even when analysts use financial ratios to predict some event such as corporate failure, they assume that the characteristics of these ratios remain stable overtime and within groups; for example, the current ratio should remain as liquidity ratio, not solvency group now and later, liquidity group. Succinctly put, temporal and group instability can affect the accuracy of prediction. In a word or two, if the results of the study reveal that the adoption of the IFRS accounting policy leads to stability and normality, then analysts can compare economic position and performance of firms within an industry. Moreover, the prediction accuracy of models which use financial ratios as inputs would improve. This state of affair sustains the establishment of industry norms, which help a capital market to fully reflect news about a company's performance so that any outliers would quantify the magnitude of news effect (*cf.* Beaver, 1968; O'Connor, 1973; Barnes, 1987). Therefore, the Financial Reporting Council of Nigeria can use the results to call for the establishment of industry norms to improve capital market efficiency. Third, on the adoption effect of IFRS on value relevance, both the IASB and the Financial Reporting Council of Nigeria can use the results to learn the perception of market participants in Nigeria. The quality of the accounting amounts and future prospects of the firm are the two major criteria that market participants consider when making investment decisions. Therefore, the results of the study help standard setters to rank the financial reporting system and future prospects of a firm in stock price determination. Fourth, on the IFRS adoption effect on earnings management, the study provides evidence to call on the Financial Reporting Council of Nigeria to adapt the IFRS accounting policies to suit the cultural development and other characteristics of the economy. This is so because the preparers of the financial statements (that is management) have greater

opportunity to manipulate earnings during the IFRS regime. Fifth, the investigation on the capital maintenance concepts provides empirical evidence on the fears expressed in the literature over the subjectivity of fair value accounting and the distribution of dividends from fair value profit or loss. The IASB can use this evidence to justify the introduction of fair value accounting. Sixth, the Financial Reporting Council of Nigeria can use the results of the investigation of the IFRS adoption effect on the GDP of Nigeria to rethink its holistic adoption of the IFRS accounting policies. If the adoption of the IFRS decreases the GDP of Nigeria, then adaptation is relevant to boost the economic position of Nigeria. Seventh, the United Nations can use the results of the investigations on compliance with corporate social disclosures to evaluate the extent to which listed firms in Nigeria are willing to comply with the corporate social disclosure requirements.

1.7 **Scope of the Study**

Each of the research questions have an agenda, which show the limits or the extent to which they have been answered in this study. On Research Question one, which addresses the adoption effect of IFRS on accounting amounts, the investigation runs on three issues: (1) the IFRS adoption effect on the aggregate financial statement elements, (2) the IFRS adoption effect on the financial ratios; (3) the impact of IFRS accounting policies on the accounting measurement paradigm. On the adoption effect of IFRS accounting policies on the distributional form and stability of financial ratios, that is Research Question 2, the discussion thrashes around the distributional forms of the financial ratios, temporal stability, and group stability. The third research question, which is on the adoption effect of IFRS on value relevance of accounting amounts, the plan is to determine the value relevance attributable to the financial reporting system under Nigerian domestic accounting standards and the IFRS accounting policies. The

focus of the fourth research question (earnings management) is to learn whether management instructed the accountants who prepare the financial statements to manipulate the earnings stream to achieve a target or recognise losses as they occur. The fifth research question, which is on capital maintenance, has three schemes of investigation: (1) the association between changes in dividend distribution and changes in fair value profit/losses; (2) the gap between the double-entry method of income determination and the surplus approach; (3) the association between changes in equity and changes in working capital. The scope of the national income question, which Research Question 6 addressed, is to determine whether the value added to the gross domestic product differs when domestic accounting standards or the IFRS are used. The direction of discussion on the seventh research question on the 'corporate social disclosure question' is whether each company complies with the corporate social disclosure requirements of the United Nations and the CAMA. The social issues of concern in this study are those that apply to manufacturing companies, and include: (1) employment creation and labour practices, (2) environment, (3) trade and linkages, (4) welfare, health and safety, and (5) government and community contribution.

The capital maintenance question, which Research Question 5 addressed, was investigated using banks and insurance companies because fair value accounting is much pronounced in this sector. Other research questions were investigated using manufacturers of consumer, industrial and pharmaceutical products for similarity of accounting process and the non-cyclical nature of the products. The purpose is to suspend the effect of the industry on the results of the study. Also, only healthy firms were included in the sample, where 'healthy firms' are those with a positive operating margin ratio so as to eliminate outliers since the study analyses descriptive statistics.

1.8 **Limitations of the Study**

The limitations of this study are defined in terms of external validity; that is, generalizability of the research findings to a wider population that the study applies. First, the IFRS accounting policies are barely three years old in Nigeria; in fact, the adoption is still at the experimental stage. It is possible that adoption will make more impact with time. Second, the study is conducted in Nigeria, which is just one of the developing countries in the world. The IASB has expressed interest in how the IFRS accounting policies are impacting on various regions of the world (IASB, 2004, Para. 93). Nigeria is just one country in Africa or in West Africa, and is not the only country that adapted the old IAS as domestic accounting standards. Thus, the findings from Nigeria alone may be insufficient to generalise the impact of IFRS on the accounting amounts and accounting quality; nevertheless, the study sets the ball rolling.

1.9 **Organisation of the Study**

The remainder of this study is structured as follows. Chapter 2 conceptualises the study in terms of economic measurement, value relevance, earnings management, the normal distribution, fair value accounting, capital maintenance and income determination, accountability and stewardship, and corporate social disclosures. The theories of accounting change are discussed to provide a theoretical orientation for the study. Also, the results of the literature reviewed on each of the empirical questions are reported. Chapter 3 describes the design and method conceived to test each of the structural hypotheses of the study whilst Chapter 4 introduces the data, presents the results, and relates the figures to possible psychological meaning within the broader framework created in Chapter 2. Chapter 5 summarises the study, restates the findings and concludes.

CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.1 Conceptual Framework

2.1.1 Economic measurement and financial ratios

The accounting process assigns values to resources and their consumption. This is known as economic measurement. An entity's resources include property and money raised from the general public which either gives equity rights over the assets or liability on management. Management's use of an entity's resources creates expenses to generate revenue, leading to profit, which becomes the reward of the owners. In essence, economic measurement involves the assignment of values to equity capital, liabilities, assets, revenue and expenses. The term *profit* is a residual concept, which is the excess of revenue over expenses. IFRS adoption produces two concepts of profit: operating profit which is the excess of revenue over expenses, and 'net income', which is the sum of operating profit and other comprehensive income. This study toed the line of Stent, Bradbury and Hooks (2010) who adopted a macro approach and, accordingly, the study takes the aggregate assets, liabilities, equity, operating profit and net income as the financial statement elements for evaluation. The line items on the face of the financial statements are not appropriate to evaluate impact of output since the two regulatory regimes differ on reporting categories.

The aggregate financial statement elements can be summarised in the form of ratios, known as accounting ratios or financial ratios. This practice is supported because financial statement numbers constitute a system (Most & Lewis, 1982, p. 31). The accounting equation depicts a relationship between the financial statement elements; therefore, it is logical to represent financial statements in the form of ratios. This subsisting relationship supports trend analysis,

prediction and other applications; for example, financial ratios can be used to match accountability with stewardship, predict corporate distress, and so forth. Financial ratios have been used to investigate the status of a company; for example, the ability of a firm to pay its debts, managerial success, compliance with regulations (Barnes, 1987).

There are two principal uses of a financial ratio (Whittington, 1980): (1) the traditional, normative use that involves the comparison of a firm's financial ratio with a norm, and (2) the positive use whereby ratios are used to forecast financial variables or predict the status of a company. The number of financial ratios that can be calculated from a set of financial statements can be astronomical so that there is the need to specify the object of analysis. In general appraisal, analysts tend to gauge liquidity, risk, debt maturity structure, asset structure and equity cushion. Mısırlıoğlu, Tucker and Yükseltürk (2013) selected the current ratio to measure short-term liquidity; long-term to equity to gauge financial risk; short to long-term debt to proxy debt maturing structure; equity to total assets to act as a company's equity cushion, and non-current assets to total assets to gauge a company's asset structure. However, in normative use, financial ratios are used to learn about the performance of the company in terms of its financial position in the industry. The return on capital employed (ROCE) is a key financial ratio to investors and lenders, and used primarily to assess whether profits are sufficient to warrant the amount of funds invested in a business. To investors, ROCE is the return received for placing funds at risk and, often, it is compared with other companies within the industry, or other industries, or even in other economies (Pizzey, 2001, p.68). In managerial assessment, ROCE is used to investigate the efficiency of management in employing funds placed at its disposal by providers of capital, and in this sense, it is a primary ratio which can be decomposed into secondary and tertiary

ratios; for example, the ratio of operating profit to sales, known as the 'net profit ratio', is a key secondary ratio used to explain changes in ROCE. ROCE is calculated as 'operating profit to capital employed', but the definition of capital employed varies among authors with varying explanations. Usually, when the focus is on the legal owners of the firm, capital employed is defined as 'shareholder fund' but in the normative use, it is the sum of fixed assets and working capital. The normative use of capital employed requires interest to be added back to operating profit in the calculation of ROCE because capital is not inputted at net. Net comprehensive income rather than net operating income may be related to capital employed but this would limit the usefulness of the ratio to comment on managerial efficiency of use of capital employed. If net comprehensive income is the measure of operation, then capital employed should include shareholder fund plus all liabilities, or the sum of fixed and current assets.

A key aspect of performance is *liquidity*—the ability of the firm to pay its way in the short run. The focus is on the availability of cash to repay creditors and the adequacy of working capital resources to finance the level of activity required by management. Typical liquidity ratios are the current assets to current liabilities, operating cash flow to total assets, working capital to total assets, and the quick ratio. The ratio of current assets to current liabilities, operating cash flow to total assets, and working capital to total assets are particularly useful for aggregate models. The use of defensive assets (cash and cash equivalent assets) to predict events have been criticised because they represent static, not stock of funds (Barnes, 1987). Thus, the quick ratio, which is based on specific components of working capital, might be useful in cash models such as credit risk applications. The current ratio is the first metric of distress prediction (Horrigan, 1968); the net operating cash flow to total assets is a good predictor of future returns on capital employed

(Fadel & Parkinson, 1978); the ratio of operating cash flow to total debts is the most powerful ratio for predicting financial distress (Beaver, 1966).

A further key aspect of performance is long-term solvency, which focuses on long-term obligation of the firm as well as the relative importance of ownership. The purpose of assessing ownership is to learn the risk associated with investment. A company that is financed largely by debt capital is riskier than that which is financed largely by equity capital because when assets are charged as security for loans, actions of managers on such assets may be inhibited. Typical ratios which investors use to gauge solvency include long-term debts to total equity, total debts to total equity, and operating cash flow to total debts. The first two ratios, known as the *debt-equity* ratios, is the best predictor of financial distress (Horrigan, 1965). The higher the debt ratio, the larger the volatility of net earnings available to stockholders, and the volatility of earnings stream that accrues to stockholders is a measure of financial risk (Drury, 1978). Put in some other form, the debt-equity ratio is a predictor of financial risk. According to Beaver (1966), the most powerful ratio for the prediction of financial distress is operating cash flow to total debts, which investors used for the assessment of whether the resources of the company generate sufficient cash to meet both short and long term obligations, followed by net operating income to total assets, then total debts to total assets, working capital to total assets, the current ratio, and the no-credit interval.

In finance and accounting literature, financial ratios are classified into groups but there appears to be no consensus. An objective classification was offered by Horrigan (1965) who classified financial ratios into two groups: (1) liquidity, and (2) profitability. The liquidity group was sub-

classified into short-term and long-term liquidity ratios whilst the profitability category was sub-classified into return on investment, turnover of total assets, and profit margin, along the lines of the *du pont* triangle of ratios system. However, a single ratio can fall into two or more categories, and ratios within a category are highly correlated (Horrigan, 1965), suggesting that a single ratio is sufficient to represent a group but the real problem is how to select the representative ratio.

In this study, the selection of accounting ratios used for the evaluation of the Nigerian Generally Accepted Accounting Practices (NG−GAAP) and the International Financial Reporting Standards (IFRS) is based on their utility as reported in the literature. The study adopts Horrigan classification, and selects ratios from the liquidity, solvency and profitability groups. In the liquidity groups, the selected ratios are operating cash flow to total assets, current assets to current liabilities, and working capital to total assets. The solvency group ratios, on the other hand, are total debt to total equity, operating cash flow to total debts, and long-term debts to total equity. The profitability group ratios are operating profit to sales (profit margin or profit ratio), operating profit to net operating assets (ROCE), and sales to net operating asset (capital turnover).

2.1.2 **The normal distribution**

The normal distribution is bell-shaped; that is, it has a single peak and falls off on either sides of the peak such that the two sides are roughly the same. The overall shape of a distribution is important because it tells whether the mean and standard deviation are appropriate statistical summaries for its description. A cross-sectional distribution of a financial ratio is expected to approximate a normal distribution because the sizes of many living things of the same species

tend to be symmetric (Moore, 1995, p. 21). Firms within an industry are of the same species; therefore, the magnitude of a ratio compiled from their annual report and accounts should approximate a normal distribution. Moreover, a financial ratio is the result of some chance outcome arising from business transactions, and hence the normal distribution should be a good approximation (*cf.* Moore, 1995, p.63). The idea beneath the normality assumption that is said to underlie the cross-sectional distribution of a financial ratio is that few firms perform below and above expectation but majority of the firms should attain average expectation, and this is plausible because of some minor variability of capital intensity among firms in the industry. In practice, there might be some slight departure from this overall pattern but not a sufficient condition to discard the normality assumption. In line with this observation, the study is designed to test whether the cross-sectional distribution of financial ratios depart badly from the normal distribution to take advantage of its great analytical opportunity in normative and positive use of financial ratios.

However, certain financial ratios are affected by institutional constraints so that severe departures from 'typical ratio' values do not occur, for example, lending institutions will use some of these ratios in financing decisions and will require certain ratio controls as part of a debt covenant (Buckmasters & Saniga, 1990). Capital structure ratios would tend to approximate the normal distribution because most companies plan their capital structure. Deakin (1976), for example, finds that the ratio of total debts to total assets is normally distributed. Management knowledge of the use of a financial ratio can affect its distributional form; for example, if management is aware that banks use the current ratio to assess ability to pay debts, there will be the tendency to manage earnings so as to improve the ratio. Absent window dressing, the current

ratio is more likely to be skewed because of the interaction of a number of external and internal factors affecting its components (Buckmasters & Saniga, 1990), suggesting that IFRS adoption which is reported to reduce earnings management (for example Iatridis, 2010; Elias, 2012) should cause skewness of the current ratio. Financial ratios with total assets as denominator are likely to be skewed because of historical cost accounting rules (Buckmasters & Saniga, 1990). If this inclination is correct, then IFRS adoption which mandates fair value accounting should restore normality in the distribution of ratios having total assets as denominator. Under historical cost accounting, income is measured at current prices but assets at historical cost whereas fair value accounting measures both components at current prices. Furthermore, some companies treat ratios as guidelines or targets to be reached during the planning and budgeting operation. The distributional form of such ratios may not depart severely from the normal distribution. Generally, financial ratios that are not affected by institutional constraints tend to be badly skewed (Buckmasters & Saniga, 1990).

2.1.3 **Value Relevance**

The term ‘value relevance’ refers to the informativeness of accounting data in relation to market value or stock return. Anandarajan and Hasan (2010) define value relevance of accounting data ‘as the power of specific financial statement numbers such as reported earnings to explain changes in equity values’ (p.270). The inherent assumption is that earnings have information content to investors, and is impounded in stock prices. However, opportunity available to manage earnings can affect value relevance of accounting data. The degree of loopholes in accounting standards depends on whether the country is of code or common law origin, whether

the financial statements support the tax laws, and whether the companies is equity or loan financed, and the auditor's identity (Anandarajan & Hasan, 2010).

The absence of opportunity to manipulate earnings is an indicator of value relevance. The basic purpose for which earnings are manipulated is to reduce tax burden or avoid breach of debt covenants (Scholes, Wilson & Wolfson, 1992; Watson, Shrives & Marston, 2002; Iyoha, 2011). Thus, if the need to minimise tax burden or avoid breach of debt covenant is absent, then one should expect higher value relevance (Alford, Jones, Leftwich & Zmijewski, 1993; Ali & Hwang, 2000; Jennings, Mayhew & Tse, 2004). Manipulating earnings to reduce tax liability is possible only if the financial statements provide the tax base on which tax liability is determined. If the determination of the tax base has no connection with the choice of accounting method, managers will not be inclined to manipulate earnings to reduce tax burden. What, perhaps, is possible is to prepare separate set of financial statements that cater to tax purpose and the other to meet mandatory external reporting but the cost of preparation can inhibit the practice. The need to manipulate earnings to avoid breaching debt covenants arise when the primary source of funding is loan rather than equity; thus, one should expect higher value relevance of accounting data when a company is equity financed. Nevertheless, managers tend to manipulate earnings to avoid adverse implications on the profit figures (Han & Wang, 1998; Aboody & Kaznik, 2000; Watson, Shrives & Marston, 2002).

Generally, accounting rules do not cover all cases so that there is some loophole to prop up earnings management but this is prevalent in code law than in common law countries. The accounting rules in common law countries are developed on a case by case basis to cover all possible scenarios and even when new forms of transactions emerge, regulations are issued to

address them. Thus, one should expect value relevance of accounting data to be higher in common law countries (Ball, Kothari & Robin, 2000; Guenther & Young, 2000; Jennings, Mayhew & Tse, 2004). Moreover, in code law countries accounting standards are developed to meet regulatory needs of the government; in contrast, common law countries have standard setting bodies constituted of both private and government agents that develop accounting standards that cater to both regulatory and professional needs. The value relevance of accounting data is higher when both the private and government agents set standards (Ali & Hwang, 2000; Hung, 2000). Furthermore, one should expect a higher value relevance of accounting data from companies with foreign investors because stock prices reflect quality of earnings and equity, which is a major attraction to investors. Also, investors are likely to place more reliability on the financial statements when the auditor is one of the Big 4 (that is Klynveld Peat Marwick Goerdeler [KPMG], Arthur Andersen, Ernst & Young [E&Y], Deloitte Touche [D&T], and PricewaterhouseCoopers [PwC]) because it is widely held that these auditors have a name to protect.

In this study, leverage, auditor's identity and foreign ownership are accounted for in the research setting but the availability of loopholes in the tax system to manage earnings is a constant because all participating companies have equal opportunity. The concomitant effect of the influence of the government and private bodies in the standard setting process is also constant because the research setting is provided by a single country.

2.1.4 **Earnings Management**

The term 'earnings management' refers to intentional manipulation of the results (Grecco, 2013). It does not amount to fraud because the act is perpetrated within the confines established by

accounting standards but it masks the truth, and hence a form of dishonesty. Earnings management exists because accounting rules do not cover all possible scenarios; therefore, once management finds some economic and financial incentives to embark on the practice, it is perpetrated. The implementation of IFRS is expected to reduce earnings management because there are more disclosures to cover all possible loopholes available for earnings management.

The technique used to perpetrate earnings management is to alter the accruals so as to smooth income; for example, defer revenue recognition to spread the effect of 'undesired news' as a cushion to report small positive profit or loss. This technique of earnings management, known as the use of 'discretionary or abnormal accruals', can signal confidence of persistence earnings over the future, and this would be good news (*cf.* Ronen & Sadan, 1981; Francis, Olsson, & Schipper, 2006). The cross-sectional Jones Model (Jones, 1991) is frequently used to estimate the magnitude of discretionary accruals. However, the Jones model is often modified by adjusting the change in revenue for change in receivables to correct for the possibility that discretion could be exercised over revenues (Dechow, Sloan, & Sweeney, 1995; Zeghal, Chtourou, & Fourati, 2012). Francis, LaFond, Olsson & Schipper (2005) argue that uncertainty in accruals is best captured by the modified Dechow & Dichev (2002) model ('DD model'). McNicholas (2002) adds the change in revenues and gross property, plant, and equipment to the original DD model, arguing that these variables are important in forming expectations about current accruals over and above the effects of operating cash flows. McNicholas entered these variables into the DD model and detected that the explanatory power increases significantly, thus reducing measurement error. However, some researchers use the quality of the accruals rather than the magnitude of the accruals (for example Francis, LaFond, Olsson & Schipper, 2005; Van

der Meulen, Gaeremynck & Willekens, 2007; Zeghal, Chtourou & Fourati, 2012) on the ground that earnings that map more closely into cash flows are of better quality.

A technique often used to examine earnings management is to focus on targets toward which firms might manage earnings (Iatridis, 2010; Zeghal, Chtourou & Fourati, 2012). The small positive earning is identified in the literature as a common target, since corporate management prefers to report small positive earnings rather than negative earnings (Burgstahler & Dichev, 1997; Leuz, Nanda & Wysocki, 2003; Burgstahler, Hail & Leuz, 2006). The approach to detect this dimension of earning management is provided by Lang, Raedy & Yetman (2003) and Barth, Landsman & Lang (2008). The variability of the change in net income scaled by total assets has been used as a measure of earnings management (Leuz, Nanda & Wysocki, 2003; Lang, Raedy & Wilson, 2006; Barth, Landsman & Lang 2008; Ahmed, Neel & Wang, 2010). A lower variance is an evidence of earnings smoothing (Zeghal, Chtourou & Fourati, 2012; Dimitropoulos, Asteriou, Kousenidis & Leventis, 2013). Another measure often used to surrogate earnings smoothing is the ratio of the variability of the change in net income to the variability of the change in operating cash flows (Iatridis, 2010; Zeghal, Chtourou & Fourati, 2012) which appears more objective than the former because it ensures that volatility of earnings is not driven by volatility in the operating cash flow (Lang, Raedy &Wilson, 2006; Barth, Landsman &Lang 2008). A further measure of earnings smoothing is the Spearman correlation between accruals and cash flows (Ball & Shivakumar, 2005; Iatridis, 2010). A more negative correlation indicates earnings smoothing because managers increase accruals to smooth poor cash flow outcomes (Land & Lang 2002; Myers J., Myers L. & Skinners, 2007).

2.1.5 **Fair Value Accounting**

'Fair value' refers to exit values of financial assets and liabilities, and 'fair value accounting' or *mark-to-market accounting* is the adjustment of assets and liabilities to reflect exit values, with the resulting loss (decrease) or gain (profit) entered into the accounts. It applies to both financial and non-financial assets and liabilities. In operating assets such as properties, plant and equipments, revaluation loss goes to profit or loss statement whilst a revaluation surplus is reported in 'other comprehensive income'. However, if a revaluation model is not adopted such that all assets are measured at cost, fair value accounting requires the asset to undergo impairment test, and if the asset is impaired, the loss be recognised in the statement of profit and loss with the written down value of the asset reported net of impairment; that is, recoverable amount. In the case of financial assets, the fair value loss or gain may go to the income statement or other comprehensive income, depending on how the financial assets are classified. The classification of financial assets and liabilities should reflect management intents and commitments. In the periods before 2013 financial assets were classified into four groups: (1) held at fair value through profit or loss, (2) available-for-sale, (3) held-to-maturity, and (4) loans and receivable. Securities held for trading purpose fall into the first group, and the resulting fair value losses or gains go to the income statement, not other comprehensive income. Moreover, such trading security cannot be reclassified into other groups. After 2013, the classification scheme changed such that all financial assets are designated as 'held at fair value' or 'held at amortised cost', but the preparers of the financial statements can still choose to designate financial assets held for trading purpose as 'held at fair value through profit or loss'. Consequently, all financial assets are either measured at fair value or at amortised cost, and a financial asset measured at fair value cannot be impaired. In the case of financial liabilities, the

classification before 2013 has been ‘held at fair value’, and ‘held at amortised cost’, but as from 2013, all financial liabilities are measured at ‘amortised cost’; however, the preparer of the financial statements is still allowed to designate financial liabilities (for example trading securities issued) as ‘financial liabilities at fair value through profit or loss’. Management can decide to hedge against adverse effect of fair value, due to fluctuation in market interest rates, known as ‘fair value hedge’. The gain or loss on fair value hedge goes to the income statement, not ‘other comprehensive income’.

Ball (2006) noted that fair value measurement is problematic to implement because of absence of active liquid markets but IFRS 13 (Fair Value Measurement) has straightened the implementation procedures. The standard advises the preparers of the financial statements to use observable market prices and absent this, the observable market price of similar items should be used. However, when quoted market prices of the assets or of similar assets are unavailable, a financial model should be used. Nevertheless, fair values, using financial models, are subjective because input variables are internally generated; for example, the expected cash flows from an asset.

2.1.6 **Capital Maintenance and Income determination**

In IFRS Conceptual Framework, ‘capital’ has two connotations: (1) financial capital, and (2) physical capital. The former refers to funds invested in the entity, and can be surrogated by equity and loan, or assets whilst the latter refers to the productive capacity of the entity, and can be surrogated by units of output. According to IFRS Conceptual Framework, ‘capital maintenance’ refers to return on capital (IFRS Foundation, 2014, p.A46). In some other form,

capital maintenance refers to profit generated by the use of capital. The IFRS Foundation puts it this way:

> An entity has maintained its capital if it has as much capital at the end of the period as it had at the beginning of the period. Any amount over and above that required to maintain the capital at the beginning of the period is profit (IFRS Foundation, 2014, p.A47).

In some other calibration, profit is achieved when the equity value is higher at the end of a period than at its beginning (Hicks, 1975, p.172). The emphasis in the IFRS Conceptual Framework is 'equity capital', and excludes loan capital because providers of loans receive interest which is an operational expense. The net profit, after loan interest has been met, represents capital maintenance. Components of equity in a typical balance sheet of an enterprise at the close of the accounting year include subscribed capital, revaluation and other reserves, previous years' profit (that is retained earnings), and net results for the year. On yearly basis, these components change due to the influence of various levels of transactions and events occurring in an enterprise, and the most common causes of change include additional contributions by shareholders, redemption of own shares in the open market, net profit or loss for the year, revaluations, and changes in accounting policies (Buk, 2012, cited in Nowak, 2013). With the recent adoption of IFRS, information about changes in equity components and transactions charged directly against equity, for instance, prior year adjustments due to errors and revised estimates is disclosed in the 'statement of changes in equity'.

The management of the enterprise distributes a proportion of the net profit to owners of the entity (that is, the shareholders) and retains the remainder as reserve. Common law forbids payment of dividends out of capital as this would amount to return of capital to owners of the entity. The

purpose is to protect creditors who should have their money returned to them before the owners. So, to preserve the order of distribution in liquidation, common law disallows the payment of dividends out of capital, but profit. Therefore, creditors are interested in the way and manner income is determined and its distribution as dividends to shareholders, and as a result, the determination of 'distributable profit' becomes a central focus in economic measurement. In accounting history, two methods were documented: (1) the surplus approach, and (2) the double account system (Ardern & Aiken, 2005). The former measures profit as the difference between the net assets at close and beginning of business, less additional capital contributed during the year, whereas the latter measures profit as the difference between revenue and cost.

In determining distributable profit under the double account system, costs are matched against revenue to produce 'gross profit', and expenses are matched against revenue to produce net profit. In the matching process, exceptional and extraordinary items are marked clearly on the face of the income statement, but IFRS disallows this practice, and directs that the income statement be separated into two parts: statement of profit or loss, and statement of other comprehensive income. This division of the income statement creates two concepts of profit in the literature: (1) traditional net income, based on the statement of profit or loss statement, and (2) statement of other comprehensive income, based on the sum of profit from trading and other income. The purpose of the separation is to mark out gains which might not be realised in the immediate period; for example, unrealised gain on debt instruments held till maturity is reported in the statement of other comprehensive income but as realisation firms up, the gain is transferred to the statement of profit or loss.

The surplus approach is characterised by economic valuation of assets and liabilities (market values). Thus, entities incorporate changes in the value of all of their assets, including current and non-current assets, in the computation of profit (Ardern & Aiken, 2005). In addition, more importance is attached to the balance sheet than the statement of profit or loss. In Ardern and Aiken's view, the statement of profit or loss exists to verify the accuracy of the calculations which underlie the surplus approach. Therefore, when the IASB emphasises fair value as well as requires management to provide summary quantitative data about what is managed as capital, the accounting profession intends a shift from the double account system to the surplus approach. This intentional shift is also suggested by the IASB avoidance of the 'profit and loss liability method' for the 'balance sheet liability method' of determining tax payable. However, prior to the adoption of IFRS, there had been some elements of mixed methods; for example, the accounting profession permits periodic valuation of assets and liabilities under historical cost accounting. Thus, the adoption and implementation of fair value accounting is an actualisation of a plan that has been on the list of the accounting profession.

Generally, fair values approximate market prices and as long as they are objectively determined, they can reflect changes in value and, hence, serve as economic reference to periodic capital maintenance (Hopwood, 1987, p.211) but the accounting profession believes that the essence of economic measurement is the periodic matching of costs (efforts) against revenue (accomplishment). Thus, the accounting profession rejected the surplus approach at the outset and focused on the double account system which matches periodic costs against revenues to determine distributable profit. Under the double account system, the statement of profit or loss is more important than the balance sheet because the primary goal of accounting is measurement,

but as the focus shifts more towards valuation, accounting goal now emphasises both measurement and valuation, though more on valuation.

The surplus approach and the double account system do not produce the same profit figure due to unrealised gains or losses (Arden & Aiken, 2005); *ceteris paribus*, therefore, the exclusion of these items from the traditional net income may lead to proximate profits under both methods. Therefore, any significant difference should suggest the subjectivity inherent in fair value practice. Gazzola and Amelio (2014) believe that a significant difference indicates risk exposure but both the statements of profit or loss and other comprehensive income report both unrealised gains and losses, for example, unrealised profit and losses on debt instruments held for trading are reported in the statement of profit or loss, not the statement of other comprehensive income. In blunter terms, the size of the other comprehensive income is not an accurate or objective surrogate of risk exposure of the company in currencies, interest rates, pension liabilities, derivatives or some other adverse exposure.

2.1.7 **Accountability and Stewardship**

In accounting and business literature, the terms ‘stewardship’ and ‘accountability’ are used interchangeably for lack of agreement on what they really mean (Abdel-Khalik, 2011). *Accountability* in the context of accounting and business means to explain how capital entrusted on management is maintained. The preparation and presentation of financial statements by management is a discharge of the accountability function. *Stewardship*, on the other hand, emphasises the managerial strategy employed to maintain invested capital. What is important to note, however, is that both terms describe ‘management transparency’. In order words,

accountability and stewardship are dimensions of transparency but the aim of financial reporting is to hold management accountable for capital entrusted on them without explaining the strategy used to maintain the capital. This appears to be a logical objective because managerial strategy is a key resource which should not be disclosed in order to outperform competitors. Nevertheless (and this is important), current and prospective investors desire to know the *output*, not 'outcome' of managerial strategy for this does not amount to divulgence of skills. If managerial output has quality, then the outcome will be positive; for example, the company's share price would increase. Abdel-Khalik (2011) proposed a measure to evaluate the *outcome* of stewardship. According to Abdel-Khalik, stewardship can be evaluated using an index which pools both fair value and historical information: $SQI = (FV - HC)/HC$, or $(FV/HC) - 1$ where SQI is stewardship quality index; FV is future value; HC is historical cost. A positive SQI is a good indicator of stewardship quality. Abdel-Khalik's stewardship index is a useful outcome index, and in terms of the firm as a whole, it can be expressed as: [market value of shares – book value of shares] ÷ book value of shares; or, as [market value of shares ÷ book value of shares] −1.

However, Abdel-Khalik's stewardship index is an outcome index, not an output index. 'Outcome' measures the perception or value of a society, not a group of some current or prospective investors. From the managerial point of view, 'Output' is the product of stewardship and can be measured by changes in working capital because it is the working of circulatory capital that increases invested capital. Thus, changes in working capital should correlates positively with changes in invested capital as an indicator of good stewardship, but this relationship might not hold with Abdel-Khalik outcome index either because of capital market imperfection or some internal factors. Nevertheless, as a test of transparency, changes in equity should correlate with changes in working capital; changes in equity should correlate with

changes in average share prices; and changes in working capital should correlated with changes in average share prices. If all relationship is strong, then management displays good stewardship and the capital market is efficient.

2.1.8 **Social and Environmental Disclosures**

Social and environmental disclosures in corporate financial reporting fall within the domain of social accounting, which is a branch of corporate accounting that reports on the responses of corporate entities to social concerns (Asechemie, 1996, p.7). These concerns, which cover social and environmental, vary from one society to another; therefore, each society must establish the limits of social concerns that corporations are expected to report on; then, *social accounting* must proceed to set out the items to be disclosed in corporate reports, the valuation principles applicable to those items, and the format for the disclosures. Social issues cover decisions on employee welfare, work safety process, and corporate responsibility to host communities whilst environmental issues relate to corporate response to environmental pollution. However, in practice, social issues which corporations respond to and report on are defined by the morals of management and public policy.

Nigeria has long expressed interest in corporate social disclosure; for example, the Companies and Allied matters Act, or CAMA, mandates companies to prepare a statement of value added as well as report on employee welfare and work process safety. Table 2.1 specifies the social issues required in CAMA. The requirements in Table 2.1 are descriptive or qualitative but the statement of value added provides financial data on social issues. CAMA did not specify a format but the Nigerian Statement of Accounting Standard Number 2 (SAS 2) did. The statement reports on the wealth created and its distribution to various stakeholders. The figure for value added shows the

contribution of the business enterprise to the national income of the country. The distributions to employees in the form of wages, salaries and pensions, represent employees' share of the wealth created, and may be used as the basis of negotiation on increases in salaries. It is also a measure of employees' satisfaction with the distribution of wealth created by the business enterprise. The taxes paid by the business enterprise represent government's share of the wealth created. Thus, the value added model specifies financial data.

However, environmental pollution did not receive attention in corporate financial reporting in Nigeria. In 2008, the Federal Executive Council approves of a corporate social responsibility policy, and the Ministry of National Planning Commission adopts the minimum environmental and social disclosure requirements of the United Nations for all corporations ('Nigerian First', 2008). The United Nations Conference on Trade, Aid and Development (UNCTAD) has a working group of experts on International Standards of Accounting and Reporting (ISAR), known as 'Intergovernmental Working Groups on International Standards of Accounting and Reporting'. This working group has provided guidance on corporate responsibility indicators (CRS indicators) in annual reports on key topics such as contribution to economic development, human rights, labour practices, human capital development, health and safety, community support, value chain, and corruption. Table 2.2 presents the core indicators selected for each of the area on corporate responsibility reporting. The Intergovernmental Working Groups on ISAR encourages management to demonstrate how and to what extent they fulfil their responsibilities towards their stakeholders—a group of people who are affected by the operation of the corporation, and can influence a corporation without necessarily holding equity share of the corporation. According to UNCTAD (2005), social and environmental disclosures increase public recognition of an enterprise's commitment, improves its reputation, enhances its

employees' motivation, and reduces the risk of conflict with third parties. UNCTAD identifies nine areas of corporate responsibility reporting: (1) workforce profile; (2) workforce turnover; (3) training; (4) employee representation; (5) organisation of working hours; (6) health and safety; (7) geographical spending; (8) value chain; (9) cases of non-compliance with regulations, based on stakeholders' need. The key stakeholders that need social and environmental information include investors and financial institutions, business partners, consumers, employees, surrounding community, civil society organisations and governments.

According to the Intergovernmental Working Groups on ISAR, investors and financial institutions are primarily concerned with the material impact that corporate responsibility (CR) issues can have on a company's valuation. Business partners such as suppliers, customers, and joint venture partners are concerned with information on CR issues to assess risks that might affect the enterprise's operations. Consumers need information on product safety measures, product liability and product warranty issues arising from past purchases. Employees need disclosure on employee issues for benchmarking against other enterprises, industries, or countries. An enterprise surrounding community is interested in issues related to economic development; for example, jobs, health, and safety. Civil society organisations such as activists and non-governmental organisations (NGOs) need a wide range of CR issues, which include labour practices, anti-corruption efforts, and environmental protection. These organisations use these strands of information for benchmarking (comparison with other companies' performance) of an enterprise's records in this area. Thus, civil organisations seek information on CR policy and its implementation. The government wants information on an enterprise's social engagement

to help formulate social and economic policies and identifies gaps in regulation and enforcement. In some countries, some government offices use such information when choosing suppliers.

TABLE 2.1

Qualitative Social Issues in the Companies and Allied Matters Act

S/N	Information Required
1.	Activities of the company in the area of research and development.
2.	Particulars of donations and gifts made for any purpose.
3.	Charity.
4.	Statements on arrangements made, or facilities provided, by the company for the training of employees during the year.
5.	Employee involvement and training.
6.	Employment of disabled persons:
(a)	Applications from disabled persons
(b)	Number of disabled persons employed during the year.
(c)	Continued employment of those that have become disabled while in the employment of the company.
(d)	Training, career development and promotion of disabled persons employed.
7.	Statement of arrangements to secure or protect employees against risk of health and safety.
8.	Employee welfare covering:
(a)	Housing
(b)	Medical care
(c)	Pension
9.	Statement of action taken to introduce, maintain and develop arrangement aimed at:
(a)	Providing employees systematically with information on matters concerning them.
(b)	Consulting with employees or their representatives so that their views may be taken into account in making decisions that are likely to affect their interest
(c)	Encouraging the involvement of employees in the company's performance through such schemes as employees share scheme.
(d)	Creating a common awareness on the part of all employees of the financial and economic factors affecting the performance of the company.

Source: Schedule 5, Part III of CAMA

2.1.9 The Economy and Economic Growth

The term *economy* refers to the financial affairs of a particular society, for example, the economy of Nigeria. The economy is complex and, hence needs to be co-ordinated to attain economic

growth. In fact, a fundamental objective of economists is to manage the economy towards economic growth. The environment and the households are the basic components of any economy. The environment provides land and other raw materials which households exploit to produce goods and services for consumption. The needs of households are many and of several types; therefore, for ease of access to variety of consumptions, specialisation develops, leading to trade by barter or some other medium of exchange—business. Starkly, households specialise to create businesses, propping up mass production of goods and services. This breeds competition as there are more goods and services than can be consumed, and to increase competitive strength several households pool their productive skills to create business firms to earn distributable profit. Thus, the economy consists of households and business firms as separate entities but together they function as a system; for example, households own the land and the raw materials on it, which may be sold to business firms to create wealth in some other form, or leased to earn rental income. Further, households provide services or work for business firms, and in return earn wages including gratuity, pension or whatever. Part of the wealth from sale of land, the rental income, or the wages is spent on purchases of the output of firms (that is the goods or services of firms). The unspent part is deposited with financial institutions for safekeeping, earn interest or both. A production firm or a financial institution is in business to meet the needs of households, other firms or institutions and, hence, both production firms and financial institutions constitute the business sector of an economy.

In addition to business firms, households create a government to provide an enabling environment for safety and conduct of business, which is the co-ordinating function. A government is empowered by taxes, fees or other revenue from households and business firms

and spends the revenue to provide infrastructures such as roads, hospitals, schools, power and safety that support the development and conduct of business. However, like households, a government can set up business firms to produce goods and services. The creation of a government adds a third sector to the economy; thus, increasing the level of interactions within the system; for example, parts of the wealth of households and business firms are spent on taxes, government pays pensions, gives subsidies to business firms so as to produce goods or services for households consumption at affordable rate, and deposits its revenue in financial institutions for safekeeping or some other purpose. Specialisation leads to mass production of goods and services but might not cover the variety of needs of households, business firms or the government. This allows for exports and imports—countries with excess goods, services, and natural resources export whilst countries in need import. In fact, every country exports and imports.

The gross domestic product GDP) is the output of the economy, and changes in the GDP overtime is a measure of the output performance of the economy (Akpakpan, 1999, p.195). In economics literature, three approaches are available to determine the GDP: the output, income, and expenditure approaches. The output approach uses the concept of the value added of each firm to determine the GDP. Under the income approach, the distribution of value added is what each production factor gets. The expenditure approach sums up the expenditure on final goods and services. In fact, the statement of value added takes into cognisance all three approaches; for example, cost of goods consumed in the production process is deducted from sales to arrive at value added; then, the value added is distributed among the factors of production. In this study, the value added model is employed to derive the value added of each firm to the GDP.

Table 2.2
Core Indicator for Corporate Social Disclosure

Group	Sub-group	Indicator
Contribution to Economic development		1. Total sales (contribution to GDP)
		2. Value of imports vs. exports (contribution to balance of payments
		3. Number of employees (contribution to job creation)
		4. Total of all salaries and pension payments (contribution to local economic activity)
Human rights	*Security*	7. Number of enterprise operations with armed security(with breakdown by type of security: company employees, contractor, government)
Labour practices	*Equal opportunity*	8. Number of female employees (with breakdown by function)
	Workforce turnover	9. Employee turnover rate (with breakdown by function)
	Collective bargaining	10. Percentage of total employees covered by a collective bargaining agreement (with breakdown by employee function)
Human capital development		11. Training hours for internal training (wit h breakdown by employee function)
		12. Expenditure on internal training (with breakdown by employee function)
Health and safety		13. Expenditure on employee health and safety
		14. Work days lost due to accidents, injuries and illness
Community support		15. Donations to civil society (with breakdown by type and nature)
Value chain		16. Number of enterprises in the dependent value chain (with breakdown by supplier, distributor and location)
Corruption		17. Number of convictions for violations of corruption related laws or regulations and amount of fines paid/payable

Source: UNCTAD, International Standards on Accounting and Reporting, ISAR, /29, 2005

2.1.10 **Information overload**

Information overload arises when the supply of information exceeds the individual's capacity to process information within the available time (Snowball, 1980; Schick, Gordon & Haka, 1990). It has been observed that task performance improves as the amount of information expands (Schroder, Driver & Struefert, 1967) but when supply exceeds the preparer's capacity to process information requirements, performance decline. Individuals can only process about six or seven

chunks of information at one time (Chewning & Harrell, 1990), and they spend more total time to make decisions relative to those with lower information loads (Casey, 1980).

Information overload arose either because the preparers lack the skill to apply the accounting standards or the cost of provision of information required is costly (Eppler & Mengis, 2004). Preparers of the financial statements might neglect financial information that is costly to produce, and hence such information constitutes information overload. In addition, some required information in the IFRS may be less important. The point being emphasised is that the rate at which information is processed can be accelerated by eliminating less important information or information too expensive to produce. When disclosure requirements contain less important information and strands of information that are costly to produce, the reporting entity adopts less cogitative demanding model that filters out such chunks of information so that processing rate is accelerated. This theorisation is in consonance with the neologism that people do not make decisions based on what optimises outcomes but what will bring enough satisfaction— satisficing. The point is that decisions are often made in complex environments in which there are high degrees of uncertainty. The oft-given analogy is that people will not look for the sharpest needle in the haystack but opt for the first one they find that is sharp enough. The fact is that processing capacity is an important factor in the efficient functioning of the capital market, but is affected by information overload and the capability of the decision maker (Eppler & Mengis, 2004).

The deletion of costly information from accounting standards does not affect capital market performance because share prices do not absorb such information. A user who desired omitted chunks of information would need to look elsewhere and, hence, incurs additional cost, but the

market prices of shares do not impound the cost of extracting information from external source, so that such 'extra costs' is of little use to market participants. The capital market finds such financial information too costly to extract, and hence not impounded on share prices (Morunga & Bradbury, 2012). This phenomenon has been described in the literature as 'market anomalies', which affects the validity of the efficient market hypothesis (*see*, for example, Bernard & Thomas, 1990; Hand, 1990; Sloan, 1996; Bloomfield, 2002).

2.1.11 **Firm-specific Factors and Compliance level**

The literature identifies several characteristics of firms that influence compliance with disclosure requirements. Auditors are the monitors of compliance—measurement, valuation, presentation and disclosure compliances. In some cases, they assist company's accountants to learn complex standards and even set up their accounting system so as to prepare IFRS-compliant financial statements (Brown & Tarca, 2005). Hodgdon, Tondkar, Adhikari & Haress (2009) find that audit firm size is positively related to IFRS compliance. Mısırlıoğlu, Tucker & Yükseltürk (2013) find that audit identity influence disclosure compliance. Generally, the big audit firms have more informative, experienced, and analytical staff to monitor compliance with accounting standards, but they might not enforce social and environmental disclosure as the IFRS has declared them voluntary. However, companies that desire international recognition might comply with the UNCTAD model of social and environmental disclosures because voluntary disclosure is driven by the desire for increased international exposure (Young & Guenther, 2003). Moreover, CAMA mandates descriptive social disclosures on employee welfare and work process safety.

Large firms disclose more information than small firms because large firms engage in more activities. The IASB has developed separate accounting standards for small firms because firm

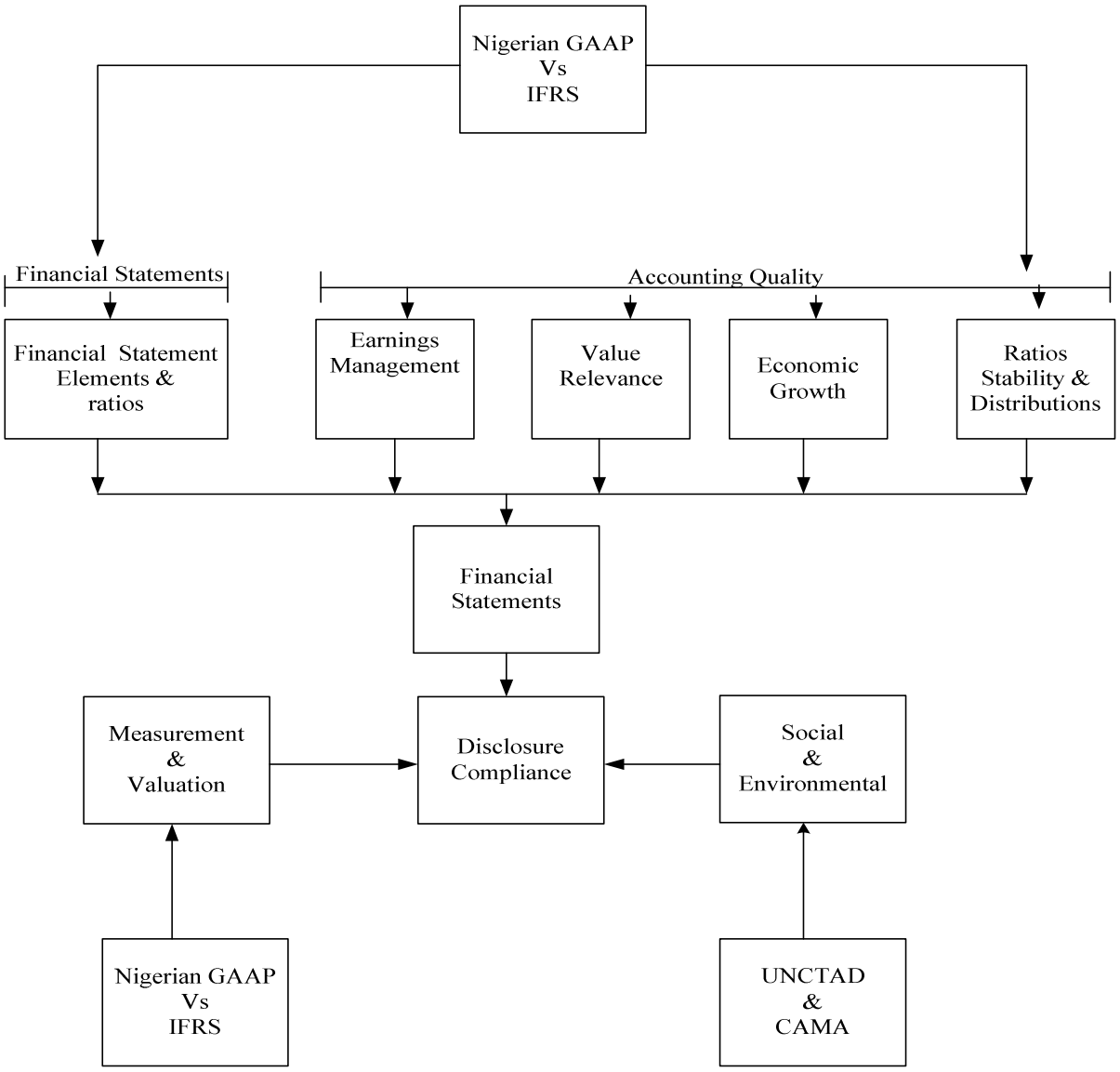
size is an important determinant of disclosure and accounting policy choice (Rahman, Pererra & Ganesh 2002). Also, a company that is highly equity financed will disclose more information than that which is highly debt financed because banks and other creditors receive information on their debts directly from management, and they may even sit on the board of companies. Thus, more disclosures are required when a company is equity oriented than when a company is creditor oriented (*cf.* Ball, 1995). Put simply, leverage or gearing can affect disclosure compliance. Further, the industry type can affect disclosure compliance due to differing nature of activities; for example, Reverte (2009) finds that environmental sensitivity of the industry of operation influences corporate social disclosure practices. Rahman, Pererra & Ganesh (2002) also note that the nature of activities within an industry could be a reason for the diversity in both the amount and type of disclosure and measurement practices among firms. Foreign shareholders in a board can influence compliance because they have greater exposure to international market (Mısırlıoğlu, Tucker & Yükseltürk, 2013).

2.2 **The Conceptual Model of the Study**

Figure 2.1 is a conceptual diagram or model, showing the variables that characterise financial statements and accounting quality, and their interrelationships. The model depicts two broad brush concepts: financial statements and accounting quality. Financial statements in the study address the aggregate accounting amounts and their ratios, which constitute the outputs of the accounting process. These outputs are evaluated for quality under Nigerian GAAP and IFRS. Quality issues relate to earnings management, market value relevance of accounting amount, economic growth and distributional properties of the financial ratios. The measurements and valuations which go into the preparation of the financial statements are disclosed under IFRS and

Nigerian GAAP, and hence disclosure compliance can be compared. In addition, social and environment disclosures are required under CAMA and UNCTAD.

Figure 2.1
Conceptual view of Events associated with IFRS adoption



Source: researcher, 2015

2.3 **Theoretical Framework**

The general position of this study is that IFRS is an instrument of accounting evolution and, as such, must be understood within a general framework of accounting change. On this premise, we

discuss both Asechemie and Hussein models of accounting change to provide a theoretical orientation for the study. As a further orientation to the study, we discuss Dunning's eclectic worldview on foreign direct investment, or FDI, to position IFRS as a key driver of economic growth. The section ends with Pawson and Tilley's method of realistic evaluation to provide a methodological guide for the design of the study.

2.3.1 **Asechemie model of accounting change**

In accounting history, certain events impact on accounting thought and practice (Asechemie, 1996, p.19). First, the challenge of new problems or opportunities, and the need to provide more efficient means can cause accounting to change. In Nigeria, for example, when society finds it justifiable for a company to transfer the management of pension funds to a neutral body, the Nigerian Accounting Standards Board (NASB) responded with SAS 8 (Accounting for Employee's Retirement Benefits) to account for the fund in both the sponsoring company's financial statements and in the books of the trustee managing the funds. Second, major developments in an economy can also spur accounting change; for example, corporate failure in the face of 'good accounting figures' led the IASB to promote fair value accounting. Third, perverse behaviour of business persons can lead to an accounting change. In Nigeria, during the era of the Structural Adjustment Programme, NASB observed that the banks' management were imprudent in their treatments of interests and principals received on doubtful credits, and this led to SAS 10 and 15 (Accounting by Banks and Non-Bank Financial Institutions Part I & II) and the Prudential Guidelines for Licensed Banks by the Central Bank. Fourth, the emergence of new categories of assets and liabilities resulting from societal values can propel an accounting change. The International Accounting Standard No. 1 (IAS 1) recognises several categories of

assets and liabilities which previously were not in Nigeria GAAP. Prior to the adoption and implementation of IFRS, the accounting profession in Nigeria was responsive to new forms of transactions and any other development in the economy. The modus operandi of the Nigerian Accounting Standards Board (NASB) was to adapt the IAS to suit peculiarities of the Nigeria's economy without a compromise; for example, all SAS has a section dedicated to explain compliance with IAS and any pertinent operational law in Nigeria. This modus operandi caught up with cultural developments in Nigeria accounting. Succinctly put, to a large extent, Nigerian GAAP converged with the IAS. Therefore, what prompted Nigeria to adopt and implement IFRS is the need to recognise new forms of transactions and categories in the IFRS Framework. The assets and liabilities are the outputs of fair value accounting, with increased disclosure requirements for the purpose of transparency, but increased disclosures can lead to information overload, which can prop up disclosure practices that differ from the requirements even among homogeneous firms.

However, the accounting change driven by the IFRS pertains to economic measurement and valuation of assets and liabilities, not social or environmental. In Nigeria, societal values for corporate social responsibility influence corporate reporting in these areas. The requirements to report on employee welfare and work safety processes are already enshrined in the Companies and Allied Matters Act, or CAMA. Also, the United Nations Conference on Trade, Aid and Development, or UNCTAD, desires the management of entities to be environmentally and socially friendly, and has come up with corporate social and environmental disclosures requirements.

On the basis of this exposition of the stimulants of accounting change, we infer that Nigeria's choice for full adoption of IFRS is anchored on the need to recognise new forms of measurement and valuation, and in line with our conjecture, we design the study to test the outputs and outcomes of the accounting amounts, their ratios, and disclosure requirements under Nigerian GAAP and IFRS. In consonance with Karl Popper science of negation, measures of output and outcome are tested for differences, and those that are significant remain in the stock of knowledge as explanatory factors for Nigeria's choice until further test refute them.

2.3.2 **Hussein model of accounting change**

Hussein (1981) identifies and explains six characteristics that influence support for an accounting change. These are (1) relative advantage, that is, the degree to which a proposed standard is perceived to be superior to the present practice; (2) relevance, that is, the degree to which financial statements based on the proposed standard provide information pertinent to decisions concerning (a) valuing the firm, (b) managing the firm, and (c) evaluating management performance; (3) reliability, that is, the degree to which information provided in financial statements based on the proposed standard is free from bias and verifiable; (4) comparability, that is, the degree to which the proposed standard is consistent with existing values and past experiences; (5) communicability, that is, the degree to which a proposed standard is easy to understand and describe to others; (6) radicalness, that is, material departure from existing practice.

In line with Hussein's radicalness, the study is conducted to provide evidence of material departure from IFRS. The study examines the inputs into the computation of the GDP, aggregate financial statement elements and their ratios, earnings management, value relevance of equity

and earnings, stability of the financial ratios within groups and their distributional form in order to deduce whether there is any material departure from Nigerian GAAP due to the adoption of IFRS. In addition, the study provides evidence on Hussein's reliability. The study is also designed to show that fair values assigned to assets and liabilities are free from management's bias by equating the profit figures obtained under the surplus approach and the double account method. The underlying premise is that when unrealised profits or losses are set aside, the two methods are 'roughly' equivalent so that any significant difference measures subjectivity of fair value practice. Moreover, management claim of capital maintenance is verified by correlating changes in equity capital with changes in working capital. Furthermore, the alleged payment of dividend from fair value profits is tested by correlating changes in the size of dividend paid with changes in unrealised profits or losses.

Hussein explains that accounting change, as an innovation, can be studied by focusing either on results of the change or the process itself. This study focuses on the results of the change; for example, the financial statement elements, their ratios, earnings quality, value relevance, disclosure compliance and economic growth eventuate from IFRS adoption. However, the study examines the process underlying the surplus approach and the double account method to learn any cause of difference, which is ascribed to unrealised profits and losses, and by draining differences off the process, it becomes legitimate to equalise background and, hence, test the significance of difference in profit figures. Moreover, by correlating changes in equity and changes in circulatory capital, the study focuses on the managerial process of maintaining equity capital, and by correlating changes in dividend distributions and changes in unrealised profits/losses, the study tests whether management protect creditors in consonance with the capital maintenance doctrine.

2.3.3 **Dunning's eclectic paradigm**

This paradigm holds that foreign direct investments, or FDI, result from ownership, location, and internationalisation advantage (Gordon, Loeb & Zhu, 2012). The search for market, resources, efficiency, and strategic assets, is the force behind FDI (Dunning, 1998; 2000; 2001). One of the key determinants that international investors use to gauge these variables is the GDP, and IFRS adoption can alter the GDP per capita; hence these variables, which drive FDI flows, are affected (Preobragenskaya & McGee, 2004; Gordon, Loeb & Zhu, 2012). If the implementation of IFRS affects the GDP, then IFRS is an indirect driver of FDI flow. The argument is that international investors lack sufficient information to evaluate a country's market, resources or efficiency of management; therefore, the IASB intervened to set minimum disclosure requirements, which should reveal all strands of information necessary to make investment decisions. Put succinctly, this explanation which is grounded on principal-agent framework, states that IFRS increase information disclosure and, hence, reduce the information gap between principal (investors) and agents (management), which should now lead to both portfolio and foreign direct investments (*cf.* Meser, Veith & Zimmermann, 2015). The principal needs information about the business and the agent satisfies this need by financial reporting but agents can be economical with the truth because there is always the tendency to expropriate the principal. Thus, both disclosure and expropriation are agency cost but the latter far outweigh the former so that IFRS is seen to reduce agency cost.

The board system which comprises audit committee, internal and external auditors, are mechanisms of the principal to stop management and large shareholders from misconduct but as Waring observes, human beings are sometimes competitive, sometimes collaborative, often both

(Waring, 1973). Boards become redundant when there is a dominant active shareholder (Brewer, 1997). The flurry of bank recapitalisation and consolidation which occurred in Nigeria during 2004−2006 substantiates this statement. Most of the banks affected were family businesses with boards constituted to meet statute requirements. The family owners of these banks sponsor board members who must remain loyal at all times. The board system is now seen as deficient, and Brewery has called for replacement by a formal committee of advisors.

Audit committee can call upon the internal auditor to carryout an investigation on any issue that is not clear to it (CAMA, 2004, s.359). Thus, members of audit committees need no accounting knowledge except, perhaps, knowledge of the industry in which the company operates. However, reliance on the internal auditor for investigation is a quirk on corporate governance because the internal auditor is a management employee and is beholden to management. Corporate governance ethics require the internal auditor to report any alarm on financial misappropriation to the audit committee rather than management but this does not raise the serpent tail above waters. There is always some informal relationship between external auditors and management, and this can affect the truth. Therefore, mechanisms of corporate governance need to be complemented with adequate information disclosure to reduce the risk associated with uncertainty, and this should attract capital to the domestic market. More to this point, with low level of disclosure or weak enforcement mechanisms of corporate governance, international investors are not willing to enter into the market, and for investors who do not care a damn, they demand higher risk premium but with IFRS disclosure compliance, information is readily available to decide whether a company is good or bad, and this should reduce risk premium.

2.3.4 **Realistic evaluation**

The method of realistic evaluation, designed by Pawson and Tilley (1997) for the evaluation of public policies and programmes, guides the conduct of the study. 'Realistic evaluation' has three elements: context, mechanisms and outcomes, which interlock into a system. *Mechanisms* are the causes of outcomes (that is the events experienced in the real world), and can occur only in specific contexts, not in all contexts. Mechanisms produce outputs which society evaluates as effective or ineffective. As an example, an educational system produces graduates (the outputs), which are employed in commerce and industry. The ease with which graduates secure jobs and employers' perception of the quality of graduates are measures of outcomes. In this study, the IFRS is spotted as an instrument of accounting change (a mechanism) which produces financial statement amounts (outputs) for investors and other users to evaluate (outcomes). Two fundamental issues emerge from this analysis. The first questions whether the outputs of the accounting change differ significantly from that of the old system. If they are not, then one should expect little or no improvement in the outcomes. The second issue addresses the quality of outcomes, based on remarkable differences between outputs of the old and new system. An accounting change is justified only if the outputs from the new process are of higher quality. The thesis is that if the outputs of the accounting process are of high quality, then the outcomes should be of high quality. In concrete calibrations, if the accounting amounts under Nigerian GAAP and IFRS differ, and the accounting amounts under IFRS is of higher quality then market value relevance of the accounting amounts under IFRS should be higher. In the spirit of realistic evaluation, the financial statement elements and their accounting ratios have been identified as the outputs from the application of the IFRS for assessment vis-à-vis the outputs of Nigerian

GAAP. If the results from the assessment are outstanding, then, higher quality earnings and increased market value relevance of equity and earnings are expected.

2.4 **Empirical Review**

2.4.1 F**inancial statement elements and ratios**

Several studies have been conducted to detect the effect of transition from domestic accounting standards to IFRS. The data are cross-sectional distributions of the financial statement amounts and the ratios. These studies compare the cross-sectional distributions of the accounting figures under the domestic accounting standards and IFRS, using appropriate descriptive statistics based on either the change distribution or a distribution of Gray's comparative index, and inferential test results. Table 2.3 is a summary of major studies on the adoption effect of IFRS on financial statement elements and ratios by country and findings. Irrespective of the legal system and source of finance to companies, there appears to be no major differences in findings; for example, the effects on assets and indebtedness in Spain and UK are essentially the same (Gaston, García, Jarne & Gadea, 2010) though the results are somewhat different in terms of equity and profitability. Gaston, García, Jarne & Gadea (2010) report that the transition to IFRS in the UK increases assets and liabilities but decreases equity and profitability. Silva, Do Couto & Cordeiro (2009) and Istrate (2014) also detect an increase in equity but decrease in net income and profitability.

A decrease in equity and an increase in profitability or vice versa is incongruent and, in fact, the results of concomitant studies fail to sustain this pattern; for example, Iatridis (2010) and Lueg, Punda & Burkert (2014) detect increase in both equity and net income in the UK. Hung &

Subramanyam (2007), Lantto & Sahlström (2009) and Haller, Ernstberger & Froschhammer, (2009) also detect increase in equity and profitability in code law countries. This appears a rather subtle point and is worth thinking through.

Table 2.3
Studies on adoption effect of IFRS on Financial Statement Elements and Ratios by countries and findings

S/N	*Authors & countries*	*Major findings*
1.	Jermakowicz & Gornik-Tomaszeaski, 2006; EU countries.	Increase in earnings & equity.
2.	Hung & Subramanyam, 2007; Germany.	Increase in equity, income, total assets, & liabilities.
3.	Haller, Ernstberger & Froschhammer, 2009; Germany.	Increase in net income and equity.
4.	Godwin, Ahmed & Heaney, 2008; Australian.	Increase in liabilities, equity, profit, no effect on assets & the ratio of operating profit to total assets.
5.	Lantto & Sahlström, 2009; Finland.	Increase in long-term debts, equity, total liabilities; increase in operating profit to sales, net income to equity, but no effect on current ratio.
6.	Silva, Do Couto & Cordeiro, 2009; Portuguese	Increase in assets, liabilities & income but decrease in equity; decrease in gearing ratio.
7.	Stent, Bradbury & Hooks, 2010; New Zealand.	Increase in assets, liabilities, equity & profit but decrease in equity but no effect on revenue; increase in net profit to equity, leverage, net profit to sales.
8.	Gaston, Garcia, Jarne & Gadea, 2010; UK & Spain	Assets, liabilities, or indebtedness increase in both countries but solvency decreases.
9.	Lueg, Punda & Burkert, 2014; UK.	Increase in net profit to equity, operating profit to sales, but no effect on current ratio.
10.	Grossman, Smith & Tervo, 2013; U.S.	No differences in financial statement numbers.
11.	Mısırlıoğlu, Tucker and Yükseltürk, 2013; Turkey.	Increase in assets, equity, long-term debts to equity, but no effect on liabilities, retained earnings & current ratio.
12.	Istrate, 2014; Romania.	Increase in equity and leverage but decrease in net income & return on equity.
13.	Baki, Uthman & Sanni, 2014; Nigeria.	No significant differences in financial ratios.

Source: Review of empirical studies on aggregate accounting amounts and ratios by the researcher, 2015

The US has not adopted the IFRS and as such studies use multinational companies that prepared financial statements in US GAAP and restated to IFRS to detect the effect of adoption on the accounting amounts. One such study conducted by Grossman, Smith & Tervo (2013) detects no impact, suggesting that the US GAAP and the IFRS are not essentially different though value

relevance might differ due to societal values. In Nigeria, Baki, Uthman & Sanni (2014) compile a time series distribution of some financial ratios from the accounting records of a single oil firm that voluntarily adopted IFRS and test for the adoption effect without a control for time series differences. The object of the study is to detect the impact of IFRS adoption on time series ratios, not to evaluate the accounting change. Thus, this study is the first to fill this glaring hole in the literature.

2.4.2 **Financial ratios stability and distributional forms**

Several studies have been conducted on the distributional properties of financial ratio distributions. Table 2.4 summarises the studies by theme and findings. An examination of Table 4 shows that the distribution of a financial ratio deviates significantly from the normal distribution. Only Horrigan (1965) & O'Connor (1973) find approximate normality. However, these studies were not designed to detect normality as an objective but as part of preliminary analysis to select appropriate statistics. Deakin wrote the seminar paper on the normality assumption that is said to underlie the distribution of financial ratios (Deakin, 1976) and detects non-normality but Bird & McHugh (1977), in a close study, find approximate normality. However, subsequent studies corroborate Deakin's results. Both Frecka & Hopwood (1983) and Ezzamel, Mar-Molinero & Beecher (1987) replicate Deakin's study and observe similar results. Other independent studies also confirm Deakin's results (Bougen & Drury, 1980; Buckmasters & Saniga, 1990; Martikainen, Perttunen, Yi-Olli, & Gunasekaran, 1995; Akintola, 1998).

Outliers appear to be the major cause of non-normality and instability of financial ratios within groups; for example Martikainen, Perttunen, Yli-Olli & Gunaekaran (1995) examine the distributions of 10 financial ratios and detect non-normality for six, and approximate normality in return on investment, return on equity, quick ratio and the current ratio. However, all ratios

became normally distributed when outliers were identified and eliminated. Further, they find that financial ratios within a group tend to be more stable when outliers have been eliminated. Nevertheless, Bougen & Drury (1980) and Ezzamel, Mar-Molinero & Beecher (1987) detect non-normality even after the elimination of outliers. The industry effect is likely to account for the non-normality observed in previous studies because there is large variability of capital intensity among companies producing different products (Buckmasters & Saniga, 1990) though Deakin (1976) was inconclusive as to whether the ratios were normally distributed within an industry. Nikkinen & Sahlström (2004) examine the distribution of financial ratios across firms in different countries and find non-normality, suggesting that the accounting environment affects the distributional form of financial ratios.

A further study of Table 2.4 shows that there is no consensus on the number of financial ratio groups or the ratios that should go into a group. On the basis of pragmatic empiricism (logic), Horrigan (1965) classifies financial ratios into two broad brush groups: liquidity and profitability, with the former sub-classified into short and long term, based on maturity period, and the latter into return on investment, capital turnover, and profit margin. Pragmatic empiricism can be contentious and, in fact, there is no consensus. A data orientation approach has also be used to group financial ratios, leading to several groups but there is still no consensus; for example Pinches, Mingo & Carruthers (1973) follow a data orientation approach and obtain seven groups but Laurent (1979), following the same approach, identifies 10 groups whilst Johnson (1978, 1979) identifies nine factors.

Table 2.4
Studies on Distributional Characteristics and Stability of Financial Ratios

S/N	Studies	Theme	Major findings
1.	Horrigan (1965)	Cross-sectional distributional patterns of 17 financial ratios.	Positively skewed, but approximate normal distributions.
2.	O'Connor (1973)	Cross-sectional distribution of 10 financial ratios, tested as a preliminary analysis in a study.	Some positively skewed; some negatively skewed; overall, they approximate a normal distribution.
3.	Deakin (1976)	Cross-sectional distribution of 11 financial ratios that normally featured in distress prediction studies.	Detected non-normality due to outliers; total debts to total assets ratio follows a normal distribution.
4.	Frecka & Hopwood (1983)	Replicated Deakin study.	Detected non-normality due to outliers
5.	Ezzamel, Mar-Molinero & Beecher (1987)	Replicated Deakin study	Detected non-normality even after eliminating outliers.
6.	Bougen & Drury (1980).	Cross-sectional distribution of 7 financial ratios	Detected non-normality even after eliminating outliers.
7.	Buckmasters & Saniga (1990)	Distributional form of 41 financial ratios and stability	Detected non-normality and stability for majority of the financial ratios.
8.	Akintola (1998)	Cross-sectional distribution of 6 financial ratios	Detected non-normality except the current ratio.
9.	Martikainen, Perttunen, Yli-Olli & Gunaekaran (1995)	Cross-sectional distribution of 10 financial ratios; stability properties of financial ratios	Detected non-normality in 6; became normal after eliminating outliers; the financial ratios become stable after eliminating outliers.
10.	Pinches, Mingo & Caruthers (1973)	Classification of financial ratios using exploratory factor analysis.	Identified seven factors; financial ratios are stable over time.
11.	Johnson (1978, 1979)	Classification of financial ratios using exploratory factor analysis.	Identified nine factors; stability over time.
12.	Chen & Shimerda (1981)	Classification of financial ratios using exploratory factor analysis.	Detected instability of financial ratios.
13.	Cowen & Hoffer (1982)	Inter-temporal stability of financial ratio classifications.	Detected instability of financial ratios.
14.	Martikainen & Ankelo, (1991); Martikainen, Puhalainen & Yli-Olli (1994)	Financial ratio behaviour in terms of classification.	Financial ratios are instable; instability more pronounced for firms about to fail.
15.	Pohlman and Hollinger, (1981)	Classification of financial ratios using confirmatory factor analysis.	A priori categorization confirmed.
16.	Luoma and Ruuhela (1991)	Classification of financial ratios using confirmatory factor analysis.	Detected profitability and liquidity as clusters; a priori dimension confirmed.
17.	Kanto and Martikainen (1991)	Classification of financial ratios using confirmatory factor analysis.	A priori categorization confirmed.

Source: Review of empirical studies on distributional forms, temporal stability, and group stability of financial ratios by the researcher, 2015

In practice, logic or pragmatic empiricism guides analysts and investors in the selection of financial ratios for use. On this, a useful research assignment would be to reconcile the two approaches; that is, use a data orientation approach to confirm the financial ratios in a pragmatic group as well as determine whether they remain firm within a group. Accordingly, Chen & Shimerda (1981) use judgment to reconcile categories based on logic and data orientation with 10 representative financial ratios as well as use confirmatory factor analysis to confirm the ratios but detect high instability within groups. Also, Cowen & Hoffer (1982) examine inter-temporal stability of financial ratios and obtain concomitant results. Some studies attribute instability of financial ratios within groups to distress (for example Martikainen & Ankelo, 1991; Martikainen, Puhalainen & Yli-Olli, 1994).

In multivariate studies that use financial ratios as inputs, an important assignment is the selection of a representative financial ratio within a group. Generally, financial ratios within a category are doing the same thing so that a surrogate must be selected to avoid multicollinearity effect on the results of prediction. Horrigan (1965), Pohlman & Hollinger (1981), and Kanto & Martikainen (1991) find that financial ratios within a group are highly correlated. Horrigan (1965) suggests that the selection of a surrogate financial ratio from a group be based on empiricism but this can be subjective. A plausible scheme would be to use the mean value of all ratios within the group or a data orientation approach may be used.

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2.4.3 **IFRS and Value relevance**

Studies on value-relevance of accounting data examine the association between securities prices and accounting measures (Holthausen & Watts, 2001). The presumption of value relevance tests is that accounting data are more informative to investors if they exhibit a higher association with share prices or returns (Lang, Raedy & Wilson, 2006). An 'accounting measure' is defined as value-relevant if it has a predicted association with share prices (Barth, Beaver & Landsman, 2001). Such accounting measures must reflect information relevant to investors in valuing a firm, and is measured reliably enough to be reflected in share prices (Palea, 2013). Stock prices and stock return are summary measures of equity value and change in equity value that reflect investors' capital allocation decisions whilst earnings and equity book values are accounting amount or data (Barth, Landsman, Lang & Williams, 2012). Ohlson (1995) runs a regression of earnings and book value of equity against stock prices to detect value relevance but Brown, Lo and Lys (1999) criticise this model, arguing that scale difference across stock prices is a correlated omitted variable that increases the coefficient of determination. They recommend deflating the regression variables by past price to control for scale effects.

The literature on value relevance is replete with stock return models but several authors have argued for a valuation model. Lev & Ohlson (1982) argue that valuation models are less sensitive to model specification. Rees (1997) considers the valuation approach as more convenient than

the more usual stock returns-based analysis, on grounds that the parameters estimated using valuation models are reasonably close to those expected from theory, and that the explanatory power of such models is relatively high. Kothari & Zimmerman (1995) also promote the superiority of valuation models over the return models. Landsman & Magliolo (1988) argue that the advantages of one approach over the other are largely dictated by what the researcher wishes to assume. Gu (2005) suggests that the choice of either levels or returns model depends on the researcher's belief and research question at hand rather than any scale factor concerned. Given this historic debate, there appear to be no theoretical justification for the superiority of return models over valuation models.

Value relevance models, whether stock-return or valuation base methodology, can take a simple form whereby market value or stock return is expressed as a linear function of book values and earnings, or a linear combination of book value, earnings, research and development expenditure, dividends, capital contributions, and other information (Akbar, Stark & Shah, 2011). The inclusion of many control variables in a model increases the explanatory power (Akbar & Stark, 2003) but such proxies can include idiosyncrasies. A regression of book value of equity and earnings on stock return or share prices have been the subject of studies on 'value relevance' but Akbar, Stark and Shah (2011) partition earnings into cash flow and current accruals, and show that these have separate value relevance, and in particular, cash flows have incremental value relevance relative to both earnings and funds flow. This is expected because cash flow is an economic outcome (Barth, Landsman, Lang & Williams, 2012). Value relevance relates exogenous market variables to accounting measures to externally validate these accounting measures, and this is logical because accounting measures are intended to provide the market with new information or to confirm market expectations, and hence they influence market

valuation. However, a germane question is whether value relevance models holds during times when market values behave erratically (*cf.* Elias, 2012). Table 2.5 is a summary of major studies on value relevance.

In the United Kingdom (U.K.), Iatridis (2010) investigates value relevance of the accounting amounts under U.K. accounting standards and IFRS. Three regression models were estimated for results to carryout the comparison. In the first model, the book value per share and net profit per share were regressed on share price; in the second model, net profit divided by beginning of year share price was regressed on stock return without consideration for cash dividend received; and in the third model, book value per share and total net profit per share were regressed on stock returns. A separate regression model was estimated for pre-official and official periods so that explanatory powers and coefficients are compared in order to detect higher value relevance.

Iatridis finds that the adoption of IFRS has led to more value relevant accounting measures. Clarkson, Hanna, Richardson & Thompson (2011) conduct a similar study in Europe and Australia. The study involves firms from 15 countries among which the U.K., Australia and Ireland are the common law countries. They find that the adoption of IFRS has no impact on value relevance of market participants in common law countries. In addition, after adoption and implementation, value relevance of market participants in the two groups of countries became equal, suggesting that IFRS enhances comparability. Zeghal, Chtourou & Fourati (2012) replicate this study, comparing characteristics of accounting numbers in the pre-mandatory IFRS adoption period (2002−2004) and the post-mandatory IFRS adoption period (2006−2007) and find less value relevance after the implementation of IFRS.

Table 2.5
Studies on adoption effect of IFRS on Value relevance

S/N	*Authors & countries*	*Major findings*
1.	Iatridis, 2010, U.K.	Increased value relevance.
2.	Clarkson, Hanna, Richardson and Thompson, 2011; Europe and Australia.	No impact on value relevance of common law countries; value relevance of code law countries becomes equal to that of common law countries.
3.	Zeghal, Chtourou & Fourati, 2012; Europe and Australia.	Less value relevance.
4.	Gaston, Garcia, Jarne & Gadea, 2010; Spain and U.K.	More value relevance in both countries.
5.	Elias, 2012; Australia.	Increased value relevance.
6.	Dimitropoulos, Asteriou, Kousenidis, and Leventis, 2013; Greece.	Increased value relevance.
7.	Liu, C., Yao, Hu, & Liu, L., 2012; China.	Higher value relevance.
8.	Elshandidy, 2014; China.	Increased value relevance.
9.	Elbannan, 2011; Egypt.	Decrease in value relevance.
10.	Outa, 2011; Kenya.	Mixed results: some metrics indicate marginal increase; some decrease.
11.	Ames, 2013; South Africa.	No improvement in value relevance.
12.	Anandarajan & Hasan, 2010; Egypt, Israel, Jordan, Lebanon; Morocco, Tunisia, and Turkey.	Increase disclosure leads to more value relevance; legal and economic environment, foreign ownership and multinational activities influence value relevance.
13.	Khanagha, 2011; Bahrain and United Arab Emirate (UAE).	Value relevance increase in Bahrain but decline in UAE.
14.	Eng, Sun & Vichitsara, 2014; U.S.	No significant difference in value relevance.
15.	Barth, Landsman, Lang &Williams, 2012; U.S.	With firms from code law countries, U.S. GAAP have higher value relevance than IFRS; comparable results are obtained for firms with common law countries.
16.	Grossman, Smith & Tervo, 2013; U.S.	No significant difference in value relevance.

Source: Review of empirical studies on value relevance of earnings and equity by the researcher, 2015

Gaston, García, Jarne & Gadea (2010) compare the gap between book value and market value under local GAAP and IFRS for Spain and the United Kingdom. Spain is a code law country whilst U.K. is a common law country. They find that the gap between book value of equity and market value of equity is higher under IFRS than under local GAAP in both countries, suggesting that the implementation of IFRS impacts on value relevance of accounting data in both countries. Elias (2012) also investigates the impact of mandatory adoption on accounting quality in Australia and finds increased value relevance. Dimitropoulos, Asteriou, Kousenidis, & Leventis (2013) employ a before-and-after implementation design to examine accounting quality

in financial statements prepared under Greece accounting standards and IFRS. Greece is a code law country and is a member of European Union. In the study, the pre-IFRS period is 2001 to 2004 whilst the post-IFRS period is 2005 to 2008. They use the explanatory power of a regression of net income and book value of equity on stock prices with proxies to control size, risk, growth and profitability to detect value relevance and find that the adoption of IFRS leads to greater value relevance of earnings and book values.

Liu, C., Yao, Hu & Liu, L. (2011) examine the impact of IFRS on accounting quality in China. The Chinese economy is highly regulated; it is classified as an emerging economy. They find improvement in accounting quality with significantly higher value relevance of reported earnings. Also in China, Elshandidy (2014) investigates value relevance of accounting data after the adoption of IFRS. The study uses a before-and-after design to detect whether convergence of IFRS with Chinese Accounting Standards leads to higher value relevance. The study also includes companies operating in Hong Kong, so that the analysis includes Hong Kong accounting standards. The study finds that accounting data are value relevant under the Chinese and Hong Kong accounting standards but value relevance increase after convergence.

In Egypt, Elbannan (2011) investigates value relevance in the regime of IAS during the period 1997 to 2006. The government sets accounting standards through a ministerial body. However, in the absence of Egyptian accounting standards, International Accounting Standards are adopted. Egypt adopts IAS-based standards in 1997, which are later revised in 2002 and 2006. The study uses a market value model, where Tobin's q is used to generate a measure of market value. The study finds that the implementation of IAS affects firms' market value negatively. Outa (2011), using listed firms in Nairobi, Kenya, compares financial statements prepared under

pre-IFRS and post-IFRS adoption to learn whether accounting quality has improved as a result of the implementation of IFRS. The outcome of the study shows mixed results: some metrics indicate a marginal increase in accounting quality; some decrease. Ames (2013) investigates accounting quality in financial statements of firms operating in South Africa. The study compares financial statements prepared before the adoption of IFRS with those prepared after the adoption. The study finds no improvement in value relevance.

Anandarajan & Hasan (2010) investigate how value relevance of accounting data is influenced by transparency, legal environment, source of accounting standards, and extent of foreign ownership in the local market. The study also investigates how institution specific characteristics such as size, risk, openness, economic environment and the extent of multinational activity impact value relevance. Companies were drawn across stock exchanges in Egypt, Israel, Jordan, Lebanon, Morocco, Tunisia, and Turkey. The study measures accounting quality with CIFAR accounting index, which is produced by the 'Centre for International Financial Analysis & Research'. The CIFAR index measures the proportion of 85 financial disclosures included in a representative sample of companies annual reports. Countries with higher CIFAR indexes are characterised by relatively greater financial disclosures; that is, more transparent, more intensive, and higher quality. The study finds that value relevance is affected by disclosure requirements of a country's standard board. In particular, value relevance is more significant in countries that require greater disclosure of financial information and lowest in countries that had lesser levels of disclosure. Value relevance is greater when the private sector is involved than when it is purely government determined. Further, legal environment influences value relevance. Also, the involvement of foreign equity holders in local firms influenced value relevance; however, with

respect to institutional specific characteristics, value relevance is not influenced by size and risk but by the extent of openness, economic environment, and multinational activity.

Khanagha (2011) investigates value relevance of accounting data to market participants in Bahrain and the United Arab Emirates (UAE). These are Middle Eastern countries. Companies in Bahrain are required to comply with IFRS in 2001 whilst those in UAE in 2003. The author uses the earning return model developed by Easton & Harris (1991) as modified by Biddle, Seow and Siegel (1995), and the popular price model that relates share prices to earnings and book value of equity to study value relevance on a before-and-after design. They complement their analysis with a portfolio approach that distinguishes long and short terms value relevance. The study finds that in Bahrain value relevance of accounting data increases after the implementation of IFRS but in UAE there is a decline in value relevance after the reform.

There are no studies in the literature that compare United States, or U.S, accounting standards with IFRS using only U.S. firms because the country is yet to adopt IFRS. The studies in the literature use an indirect approach which involves the use of non-U.S. firms that prepare financial statements in IFRS and restate them to U.S. accounting standings. Moreover, the restatement requirement has been cancelled, and as a result the management of a non-U.S. firm operating in the U.S. can decide to prepare financial statements using U.S. accounting standards or IFRS. Eng, Sun & Vichitsara (2014) compare value relevance of accounting data of non-U.S. firms that adopt IFRS with those that adopt U.S. accounting standards, and find no significant difference. A pertinent question on this study is whether the firms in both samples are equivalent in essential aspects; for example, size, auditor's identity, and so forth. Barth, Landsman, Lang

and Williams (2012) match a sample of U.S. firms and non-U.S. firms using size and industry as matching coefficients. They find that U.S. accounting data generally have higher value relevance than IFRS accounting data with firms from code law countries but comparable results are obtained for firms from common law countries. However, this study also suffers from unmatched samples due to different reporting incentives and enforcement mechanisms. Grossman, Smith & Tervo (2013) compare the value-relevance of IFRS data to market participants in the U.S. They use a multivariate framework to compare abnormal returns of European firms that prepare financial statements restated to U.S. accounting standards with U.S. firms listed in the New York Stock Exchange. They find that market participants do not place a premium on IFRS-based financial information than U.S. accounting standards-based financial information. Again, this study suffers from the same methodological flaws observed in Barth, Landsman, Lang & Williams (2012). There are several other studies on value relevance in the U.S. but because the approach is not directly on the U.S. firms which prepare financial statements in U.S. accounting standards and the IFRS, these studies are not reported here.

2.4.4 **IFRS and Earnings management**

There are several studies in accounting literature that have investigated earnings management but the review is limited to those conducted to detect the effect of IFRS adoption on earnings management. Some of these studies were conducted during the time when the adoption of the international accounting standards was voluntary, not mandatory. At that time, firms apply the international accounting standards because they have incentives to do so, not because of the change in the financial reporting system. However, these studies control the intervening effects of voluntary incentives in order to obtain reliable results. In addition, these studies use match

samples of two groups where one group consists of firms using domestic accounting standards and the other using the international accounting standards. Also, these studies draw firms across different countries so that there is the need to either suspend or control the effects of intervening variables, for example, differences in economic environment, enforcement mechanism, and judicial system (for example Barth, Landsman & Lang, 2008). Some studies use voluntary and mandatory firms in order to detect the effect of IFRS adoption on earnings management. They form two primary groups: voluntary and mandatory adopters and two sub-groups: pre-adoption and post-adoption, whereby each firm acts as its own control. In these studies, the firms are either drawn across countries (for example Houqe, Zijl, Dunstan, & Karim, 2012; Ahmed, Neel & Wang, 2013; Rao & Warsame, 2014; Christensen, Lee, Walker & Zeng, 2015) or, limited to an individual country (for example Iatridis, 2010; Liu, Yao, Hu & Liu, 2011; Elbannan, 2011; Elias, 2012; Ames, 2013; Dimitropoulos, Asteriou, Kousenidis, and Leventis, 2013). The present study falls into this last category. Table 2.6 is a summary of recent studies on earnings management.

The findings in the literature are mixed. Barth, Landsman & Lang (2008), which used matched group of firms from 21 countries, find that firms applying the international accounting standards evidence less earnings management and higher value relevance. Ahmed, Neel & Wang (2013) using the firms as their own control, drawn across 20 countries, detect higher earnings management during the IFRS regime. Rao & Warsame (2014), using firms as their own controls, drawn across 21 African countries, detect less earnings management and higher value relevance of earnings. Christensen, Lee, Walker & Zeng (2015) draw firms from Germany, make the firms act as their own control but partition the firms into voluntary and resisters (that is mandatory adopters), and detect less earnings management only when the firms are voluntary adopters in

the pre-IFRS and post-IFRS. Capkun, Collins & Jeanjean (2012), drawing firms from 29 countries, partitioned voluntary firms into late and early adopters, plus mandatory adopters, and find that IFRS adoption lead to higher earnings management. The explanation for the mixed findings has been ascribed to weak enforcement mechanisms and inefficient judicial systems even though these studies included controls in their design. Houqe, Zijl, Dunstan & Karim (2012) detect less earnings management, using firms drawn across 46 countries, only when strong investor protection mechanism exists. Iatridis (2010) in the United Kingdom; Zeghal, Chtourou & Fourati (2012) in Australia and Europe; Elias (2012) in Australia; Dimitropoulos, Asteriou, Kousenidis & Leventis (2013) in Greece, and Grecco (2013) in Brazil, all detect less earnings management during the IFRS regime. Aside from Christensen, Lee, Walker & Zeng (2015), these country-specific studies have a mixed of voluntary and mandatory firms in both dichotomy of the pre-and post-IFRS adoption.

Table 2.6
Studies on adoption effect of IFRS on Earnings Management

S/N	*Authors & countries*	*Major findings*
1.	Iatridis, 2010; U.K.	Less opportunity for earnings management; more timely loss recognition.
2.	Zeghal, Chtourou & Fourati, 2012; Australia and 15 EU countries.	Less earnings smoothing; less managing toward a target; decrease in absolute discretionary accruals; increase in accruals quality.
3.	Elias, 2012; Australia.	Less earnings management; early loss recognition; increase value relevance.
4.	Dimitropoulos, Asteriou, Kousenidis, & Leventis, 2013; Greece.	Less earnings management; more timely loss recognition.
5.	Grecco, 2013; Brazil.	Less earnings management.
6.	Elbannan, 2011; Egypt.	No evidence of reduction in earnings management.
7.	Outa, 2011; Kenya.	Mixed results: some metrics indicate less earnings management; some increase.
8.	Ames, 2013; South Africa.	No improvement in earnings management.
9.	Liu C., Yao, Hu, & Liu, L., 2011; China.	Less earnings management.
10.	Rao & Warsame, 2014	Less earnings management
11.	Christensen, Lee, Walker & Zeng (2015)	Less earnings management with voluntary adopters

Source: Review of empirical studies on earnings management and IFRS adoption by the researcher, 2015

In other words, some firms in the pre-IFRS or post-IFRS period include firms which had earlier applied IFRS even before the accounting change became mandatory. A mixed of firms that applied the IFRS before the accounting change was made compulsory and firms that waited till the mandatory pronouncement can drive the results of a study. Capkun, Collins & Jeanjean (2012) who took this heterogeneous feature of firms into account detected higher earnings management. Christensen, Lee, Walker & Zeng (2015) detect higher earnings management with mandatory adopters but less earnings management with voluntary adopters.

2.4.5 **IFRS and Capital maintenance**

There are no prior empirical studies on this topic of study but the literature is reviewed on fair value and capital maintenance to establish the inadequacies levelled against the IASB or its Foundation. The perceived role of fair value accounting in the 2007−2009 financial crisis is the precipitator of the inadequacies levelled against the IASB. The usual explanation is that the write-down of assets due to fair value accounting erodes subscribed capital, and that this can force companies to sell assets at 'fire sale' prices and, hence, set off a downward spiral—a contagion (Laux & Leuz, 2010). Whilst some believe that fair value accounting is a major cause of the financial crisis (for example McMahon, 2011; Strampelli, 2011) others believe that fair value accounting has nothing to do with the crisis (Bloom, 2011; Barth & Landsman, 2010; Ball, 2008; Laux & Leuz, 2010; Abdel-Khalik, 2011; United States Security and Exchange Commission [US SEC], 2008).

The two most cited causes of the crisis are risk and leverage. McMahon (2011) argues that fair value accounting makes risk and leverage to drop, leading to improper decisions, which

exacerbated the crisis. Further, McMahon argues that undercapitalisation and equity-lacking quality is caused by the Financial Accounting Standards Boards (FASB) of the United States of America and IASB forcing all paper gains to equity, rather than banks making poor decisions of their own. In contrast, Ball (2008) argues that the 2007−2009 financial crisis is due to sharp reduction of cash flow expectations and increased discount rates. According to Ball, fair value accounting helps inform potential lenders of decline in asset values and, hence protect them against wrong economic decisions. Bloom's analysis (Bloom, 2011) substantiates Ball's view. According to Bloom, there is no evidence that fair value caused the financial crisis but changes in fair value affected companies' net income, and capital maintenance. Like Ball, Bloom blames the financial managers of financial companies who prefer to pay dividends to their shareholders, hoping that such an action would elevate their stock prices rather than retain the cash to preserve capital. Laux & Leuz (2010) did an extensive review and analysis of the empirical evidence surrounding the financial crisis and concluded that fair value accounting is unlikely to have contributed to its severity in any major way. Badertscher, Burks & Easton (2012) examine fair value provisions of the US GAAP to learn whether it depletes regulatory capital. Using a sample of 150 banks holding companies with large portfolios of non-Treasury Available-For-Sale and Held-To-Maturity securities, they find no support for the claim that fair value provisions deplete capital. Further, they find no evidence to support the claim that fair value losses caused 'fire sale' of assets. Abdel-Khalik (2011) argues that fair value accounting is not the cause of the financial crisis because accounting is not the source of decision makers' failure to manage risk but a mechanism of measurement, valuation and reporting. However, Abdel-Khalik holds that fair value accounting and financial reporting ignore the current owners of the firm and emphasise potential investors only, and suggests that disclosure requirements include both historical and

market value information for current owners to assess the stewardship of management. The author explains that unrealised gains or losses affect equity capital because they do not have corresponding changes in tangible assets, and suggests that the distribution of cash dividends be restricted to earned income.

The SEC of the United States conducted a study to learn whether fair value accounting was a precipitator of the financial crisis (U.S. SEC, 2008). The study finds that less than half of the financial assets and less than a fifth of the liabilities held by banks were recorded at fair value, suggesting that fair value accounting has nothing to do with the financial crisis. The SEC now believes that the explanatory factors of the crisis were the liquidity positions of financial institutions, asset quality, lending practices, risk management practice, and a failure of financial institutions to extend credit, not fair value accounting (Strampelli, 2011).

In the United States, the Financial Accounting Standards Board (FASB) sets financial accounting standards. The FASB is a private sector organisation, empowered by the SEC, and is a strong actor in the agenda to international accounting convergence. Therefore, if the SEC has dismissed allegations against fair value as a precipitator of the financial crisis, then fair value accounting has come to stay. Perhaps, what needs to be done is to mitigate its impact on the capital maintenance doctrine. According to Strampelli (2011), during phases of economic instability, fair value accounting introduces market volatility onto the financial statements. Unrealised profits and losses are recorded, and with market trend, performance of companies become volatile, and this can cause errors in security credit ratings (*cf*. Bloom, 2011). Unrealised fair value losses reduce a company's assets value, and hence the equity capital. The consequence of which is a premature recapitalisation, re-organisation or liquidity. The payment of dividend from

unrealised fair value profits violates the principle of capital maintenance. Strampelli (2011) recommends that distributable profit be established by deducting the positive and negative variations of fair value recorded in the income statement to guarantee the protection of creditors. Also, Abdel-Khalik (2011) recommends that realised and unrealised components of earnings should be disaggregated and reported separately, and the distribution of dividends be restricted to realised earnings only. This study provides empirical evidence that the IASB might consider to heed the call on inadequate capital maintenance.

2.4.6 **IFRS and economic growth**

One key objective of the IASB is for entities' financial statements to provide useful data for the preparation of national income statistics but no study has tested the adoption effect of IFRS on national income accounting. Tangential studies test whether IFRS adoption leads to increased foreign direct investment; for example, Gordon, Loeb & Zhu (2012) conduct a study to learn whether IFRS adoption influences FDI, and whether the effect defer between developed and developing countries, and find that IFRS adoption is positively associated with increase in total FDI inflows but only for developed countries. Zehri & Abdelbaki (2013) conduct a study to determine the factors underlying the decision to adopt IFRS and find that economic growth is a key driver.

Zaidi & Paz (2015) report empirical studies on the adoption effects of IFRS on economic growth. They report that in Africa, Larson (1993) conducts a cross-sectional study to determine whether economic growth rates of countries that adopt IAS differ from those of non-adoptee countries, and finds that countries which adapt IAS with adjustments to meet local environmental factors experience better economic growth than countries that either adopt them without adjustments or

do not adopt them at all. This result implies that a full adoption of IFRS in Africa without adjustment to cater to peculiarity of the economy will not lead to economic growth. In Gordon, Loeb and Zhu's study, growth was observed only for development countries. Woolley (1998) examines the differences in economic growth rates between IAS adoptee and on-adoptee of Asian countries and finds no significant difference. Zaidi & Huerta (2014) examine the adoption effect of IFRS on economic growth and find a positive relationship when enforcement is strong.

Efficient capital markets promote economic growth of countries (Lee, 1987) and this requires a well-developed accounting structure (Zaidi & Paz, 2015), suggesting that IFRS adoption should lead to higher economic growth, but this inference do not hold for Africa countries (Samuels & Piper, 1985; Hove, 1989). Larson & Kenny (1995) conduct a study that involves 27 Africa countries to learn whether IAS adoption affect equity market development and economic growth, and find no association.

2.4.7 **Corporate social responsibility disclosure**

The literature is replete with studies on IFRS compliance but scanty on compliance with corporate social disclosure. Table 2.7 presents major studies conducted on compliance with IFRS economic disclosure and social disclosure. Street & Bryant (2000) investigate compliance with IAS using companies with and without United States listing or fillings. They also investigate the extent of voluntary disclosure provided by companies claiming to follow IAS and the factors associated with voluntary disclosures. They find that the extent of compliance with IAS is greater for companies with US listings; also, a higher level of compliance was detected when an auditor states that the financial statements are in accordance with IAS, or that the International

Standards of Auditing (ISA) were followed when conducting the audit. Street & Gray (2002) investigate the extent of compliance with IAS and the factors associated with compliance. They find a significant extent of non-compliance with IAS disclosure requirements. Key factors associated with levels of compliance include listing status, auditor identity and country of domicile. Rahman, Pererra, & Ganesh (2002) compare accounting regulations and accounting practices of Australia and New Zealand to learn the extent of disclosure compliance. They also examine firm-specific factors associated with accounting practice harmony. They find that regulatory harmony (that is similarity of the requirements under both GAAP) can improve practice harmony, and that accounting practice harmony is associated with firm-specific characteristics. In China, Peng, Tondkar, Vander Laan Smith & Harless (2008) investigate two aspects of compliance with IFRS: (1) the level of a firm's compliance with accounting regulations, *compliance*, and (2) consistency of firms' accounting choices under two sets of accounting regulation, *consistency*. They use the reconciliation schedule of net income between Chinese GAAP and IFRS (earnings gap) to measure the degree of convergence. In addition, they calculate comparability and consistency indices to measure compliance and comparability. They detect significant improvement in consistency of application of accounting methods and compliance but more firms comply with Chinese GAAP than IFRS. Glaum & Street (2003) investigate compliance with both International Accounting Standards and US GAAP for companies listed on the Germany's New Market. A regression of firm-specific and macro factors against compliance index was also embarked upon. They find that companies listed in Germany's New Market comply more with US GAAP than IAS. They conclude that the market in which firms are listed influence compliance. In addition, they detect that auditor identity, not firm size, is an important explanatory factor of compliance with accounting standards. Al-

shammari, Brown & Tarca (2008) investigate the level of compliance with IAS in six Gulf Co-operation Council states from 1996 to 2002. They find that compliance increase overtime.

Table 2.7
Studies on disclosure compliant with IFRS and UNCTAD

S/N	*Authors*	*Major findings*
1.	Street & Bryant, 2000.	Compliant with IAS is greater for companies with U.S. listings; audit influences compliance.
2.	Street & Gray, 2002.	Listing status, auditor's identity, and country in which the firm is domicile influence compliance.
3.	Rahman, Pererra, and Ganesh, 2002.	Similarity of disclosure requirements in both GAAPs improves practice harmony; accounting practice harmony is associated with firm-specific characteristics.
4.	Peng, Tondkar, Vander Laan Smith & Harless, 2008.	In China, there is consistency of applications of accounting methods but more firms comply with Chinese GAAP than IFRS.
5.	Glaum & Street, 2003.	The market in which firms are listed influences compliance; auditor's identity influences compliance.
6.	Al-Shammari, Brown & Tarca, 2008.	In the six Gulf Co-operation Council States, compliance improves within the period of 1996 to 2002 studied.
7.	Hodgdon, Tondkar, Adhikari & Haress, 2009.	Compliance is positively related to auditor's choice.
8.	Mısırlıoğlu, Tucker and Yükseltürk, 2013.	Lack of skills or resources to cope with IFRS affects compliance. Firm-specific factors that affect compliance include auditor's identity, firm size, and foreign ownership.
9.	Bahadir & Demir, 2014.	Compliance level is positively associated with the Big 4s but negatively associated with leverage. Profitability, company size, and age were not significantly related to compliance level.
10.	Agyei-Mensah, 2013.	Finds significant improvements in the quality of financial disclosures in Ghana.
11.	Santo, Ponte & Mapurunga, 2014.	Low level of compliance in Brazil; auditor's identity explains compliance.
12.	Morunga & Bradbury, 2012.	In New Zealand, annual report and accounts increase by 92%, implying information overload.
13.	Reverte, 2009.	Size, higher media exposure and environmental sensitivity of the industry of operation influence corporate social disclosure practices, not profitability or leverage. The most influential characteristics are media exposure, followed by size and the industry.
14.	Iatridis, 2013.	Environmental performance, investors' perception & corporate governance are positively linked to environmental disclosure; in turn, environmental disclosure influence value relevance and stock valuation.
15.	Vander Laan, Gouldman, & Tondkar, 2014.	In European and Australia firms, corporate social disclosure increases in shareholder oriented countries, suggesting that shareholders approve of disclosures of social issues.

Source: Review of empirical studies on consistency and disclosure compliant with IFRS and UNCTAD by the researcher, 2015

Hodgdon, Tondkar, Adhikari, and Haress (2009) examine the impact of auditor choice on IFRS compliance. In detecting the impact, they control possible concomitant variables (firm size, profitability, leverage, and degree of international diversification). They find that compliance improves, and is positively related to auditor choice.

In Turkey, Mısırlıoğlu, Tucker & Yükseltürk (2013) examine disclosure compliance with IFRS as well as firm-specific factors that can influence compliance. Six firm-specific factors were investigated: (1) auditor identity, (2) firm size, (3) gearing, (4) free-float, (5) foreign ownership, and (6) industry type. The study detects some compliance improvement, and observes that the vast majority of the disclosure items required by IFRS were not disclosed, and attributed the failure to lack of skills or resources to cope with IFRS, or irrelevance of the standard to the nature of an individual company. Specific factors detected to influence compliance were auditor type identity, firm size, and the degree of foreign ownership of shares of the company. Also in Turkey, Bahadir & Demir (2014) investigate compliance with IAS and firm-specific factors influencing compliance. They find that compliance levels range from 64 to 92 per cent, with an average of 79 per cent. Compliance level was detected to be positively related to being audited by one of the Big 4 auditing firms but negatively associated with the level of leverage. Profitability, company size and age were not significantly related to compliance level.

Agyei-Mensah (2013) investigates the quality of accounting disclosure in financial statements prepared by firms listed in the Ghana Stock Exchange in pre-IFRS and post IFRS-adoption period. In the study, ‘quality of disclosure’ is directly measured by assigning scores to qualitative characteristics of relevance, faithful representation, understandability and comparability present

in the financial statements including the notes to the accounts. The quality of disclosure in each period and concomitant variables, which include liquidity, profitability, leverage, size, auditor type, and leverage, are regressed on the index of disclosure of each firm. The author finds significant improvement in the quality of financial disclosure after adopting IFRS. Santo, Ponte & Mapurunga (2014) examine levels of disclosure, and key factors influencing disclosure requirements in Brazil—a code law country which adopted IFRS in 2010. The study used non-financial firms adopting IFRS the first time. The research questions address level of compliance with the IFRS disclosure requirements, and the firm characteristics that explain disclosure compliance levels among firms. They identify 638 disclosure required items from IFRS and 366 from Brazilian GAAP, and detect a low level of compliance with the IFRS disclosure requirements. On firms' characteristics that influence compliance level, only audit (that is, whether the audit is by one of the Big 4—Ernst & Young, Deloitte, KPMG, and PwC) is found to explain compliance level.

Morunga & Bradbury (2012) examine the length of annual report and accounts of companies operating in New Zealand before and after implementation of IFRS. New Zealand adopted IFRS in 2007 but early adoption was in 2005. The author has argued that length of annual report and accounts is an element of information overload. In the study, sections on financial statements, policies, and notes are compared. The financial statements compared are the profit or loss, balance sheet, comprehensive income, and cash flow while policies compared are classified as general, IFRS transition, financial instruments, and critical statements. They find that 92 per cent of the sample had annual reports which increased in length. This increase is attributed to increase in the financial statements and notes of the annual report, especially notes to the accounts.

In Spain, Reverte (2009) examines whether industry characteristics and media exposure are potential determinants of corporate social responsibility (CSR) disclosure practices. The characteristics investigated are size of the firm (measured by the natural logarithm of market value of the firm), industry environmental sensitivity, profitability, ownership structure, international listing, and media exposure. These characteristics are regressed against CSR ratings using multiple regression equation. The study finds that larger size, higher exposure, and environmental sensitivity of the industry of operation influence CSR disclosure practices, not profitability or leverage. The most influential characteristics are media exposure, followed by size and the industry.

In Malaysia, Iatridis (2013) examines the association between environmental disclosure and environmental performance on one hand, and the association between environmental disclosure and corporate governance on the other hand. A multiple regression is used to model the association expressed in each case, with several control variables: audit quality, the proportion of common equity held by managers and institutional investors, change in management, return on assets, leverage, and size. Environmental disclosure score is calculated for each company in the sample, following the scheme of the Global Reporting Initiative (GRI). Environmental performance is measured by the total amount of hazardous waste produced in tonnes deflated by net sales whilst corporate governance is measured by the existence of audit committee, the existence of independent and non-executive directors in the board and in the audit committee. Iatridis finds that companies with high environmental disclosures are positively linked to environmental performance, and effective corporate governance.

Iatridis goes further to examine the financial attributes of companies with different environmental disclosure scores. The objective is to learn whether companies with effective environmental disclosure and corporate governance face less capital constraint. This objective is logical because, on voluntary basis, companies disclosed social and environmental information about their operation to seek investors' recognition. Environmental disclosure quality (measured by GRI scores), environmental performance, the cross-listing status of the company, and several of the control variables included in the former analysis are regressed on scores indicating the extent to which each company faces capital constraint, which is assigned based on Kaplan and Zingales index. Iatridis finds that firms with effective environmental and corporate governance structures are likely to face less capital constraints. Other issues investigated are the value relevance of environmental disclosures, and investors' perceptions of environmental disclosure. Iatridis finds that environmental disclosures provide incremental information that is value relevant and positively related to stock valuation. Also, environmental disclosures are positively associated with investors' perceptions.

Van der Laan, Gouldman & Tondkar (2014) investigate whether firms' corporate social disclosure (CSD) policies are affected by the mandatory disclosure requirements of IFRS. They examine the level of CSD provided by large European and Australian firms for two years prior to adoption of IFRS (2003 – 2004) and two years following adoption (2006−2007). The design partitioned controls into two: (1) shareholder-oriented countries, and (2) stakeholder-oriented countries. They find that CSD increased in shareholder oriented countries, suggesting that shareholders approve of disclosures of social issues.

2.5 **Summary of Literature Review and Emerging issues**

2.5.1 F**inancial statement elements and ratios**

The International Financial Reporting Standards are instruments of accounting innovation, the adoption of which must be justified on pragmatism. The degree to which the financial statement elements and ratios differ under existing and proposed standards is a practical evidence to sustain an accounting change. This premise has triggered several studies into the adoption effect of IFRS on the financial statement elements or the financial ratios (see, among others, Jermakowicz & Gornik-Tomaszeaski, 2006; Hung & Subramanyam, 2007; Stent, Bradbury & Hooks, 2010; Mısırlıoğlu, Tucker and Yükseltürk, 2013; Lueg, Panda & Burkert, 2014). The findings vary across countries. In Germany, Australia, Finland, New Zealand, and the United Kingdom (or 'the UK'), IFRS adoption leads to increase in equity and earnings (Hung & Subramanyam, 2007; Godwin, Ahmed & Heaney, 2008; Lantto & Sahlström, 2009; Iatridis, 2010; Stent, Bradbury & Hooks, 2010). In Turkey, IFRS increases equity but no effect on earnings (Mısırlıoğlu, Tucker and Yükseltürk, 2013) whilst in Portuguese, IFRS decreases equity but increases earnings (Silva, Do Couto & Cordeiro, 2009). IFRS increases aggregate assets and liabilities except in Australia and Turkey. In the UK and Finland, the operating profit margin ratio and return on capital employed increase; gearing increases in New Zealand and Turkey but decreases in Portuguese. The variation in results has been ascribed to the legal system and the primary source of finance; for example, Nobes and Parker (2010) find a correlation between equity financing, common law, and similarity to IFRS, suggesting that IFRS makes no impact when companies rely on equity financing and situate in countries of common law origin but concomitant research findings are incongruent. The transition to IFRS in the UK, which is the originating country for common law, even affects the financial statement elements and ratios (Lueg, Punda & Burkert, 2014; Iatridis,

2010). The United States (or 'the US') and the UK are the major key players in the development of the IFRS; therefore, their domestic accounting standards are not essentially different from the IFRS. New Zealand domestic accounting standards and IFRS are similar yet Stent, Bradbury & Hooks (2010) detect impact on the aggregate financial statement elements and ratios. The results, using companies that rely on debt financing and situate in countries of code law origin (that is the French model), are not different: In Germany, Finland and Spain, the transition to IFRS affects the financial statement figures, including the ratios. These strands of evidence suggest that IFRS makes impact on the accounting amounts, including their ratios, irrespective of the legal system or the dominant source of funding; however, the degree of impact is higher when companies rely on debt financing and situate in countries of code law origin. A fundamental question, however, is whether IFRS makes impact on the accounting numbers in countries that adapt the old IAS. This question is fundamental because Larson (1993) finds that developing countries that adopt the International Accounting Standards with adjustments to meet local environmental factors experience better economic growth than countries that either adopt them without adjustments or do not adopt them at all. Domestic accounting standards in previous studies are independent of the old IAS but Nigerian GAAP depend on the old IAS; for example, common or code law countries that are developed have resources to develop accounting standards from scratch, and to this extent, might develop domestic accounting standards that are similar or differ from IFRS but independently. In contrast, the developing countries simply adapt the old IAS for lack of resources (Larson, 1993) and, hence, have long depended on the International Accounting Standards; for example, the Nigerian Accounting Standards Board had always adapted the old IAS to suit the peculiarity of the Nigerian economy, or any new forms of transactions peculiar to her culture until the mandatory adoption. Nigeria adopts and implements

the IFRS in 2012 fiscal year, and at this period, the NASB has not updated the Nigerian GAAP so that it provides a research setting to test whether IFRS makes impact in countries which adapt the old IAS as domestic accounting standards.

2.5.2 **Financial ratios stability and distributional forms**

The normative and positive uses of financial ratios rely on the assumption that the normal distribution underlies the distributions of all financial ratios (Whittington, 1980). This is a fundamental assumption insofar as it underlies practice and prediction. In the traditional or normative use, a firm's financial ratio is compared with the industry norm which is an industry average, established from a cross-sectional distribution of the ratio compiled from the records of firms within an industry. The positive use of financial ratios, on the other hand, requires that the ratios be stable overtime for it to consistently predict a phenomenon or remain within a category of ratios; for example, the current ratio should be stable overtime for it to consistently belong to the liquidity group or predict distress. Coincidentally, a violation of the normal distribution affects temporal and intra-group stability of financial ratios (Martikainen, Perttunen, Yi-Olli & Gunasekaran, 1995); hence, the normality assumption is crucial to both traditional and positive analysts.

The normal distribution is characterised by the mean and standard deviation so that when the distribution of a financial ratio approximates a normal distribution, the industrial average should be the mean and the standard deviation a measure of stability. Some amount of variability characterises the distribution of a financial ratio because it is the result of some chance outcome arising from business transactions. This instability in a financial ratio distribution causes

variability in financial ratio grouping; hence, several ratios can belong to one group and a single ratio can belong to two or more groups; for example, the ratios of operating cash flow to total assets and working capital to total assets may go into capital turnover group of ratios, the liquidity group or even the solvency group. However, multiple ratios in a group can be a blessing and a curse; for example, analysts can evaluate a firm's profitability using different financial ratios within the profitability group but when it comes to prediction the choice of which ratio to select in a group becomes an issue. Horrigan (1965) finds that financial ratios within a group are highly correlated, suggesting that a single representative ratio in a group is sufficient for the purpose of building a parsimonious model. Thus, analysts with the objective of predicting some phenomenon must embark on the selection of a surrogate financial ratio in each group.

A germane question is, 'should refutation or the assumption be dismissed?' This question is significant because the dominant finding in the literature is that the distributions of many financial ratios are non-normal (see, among others, Deakin, 1976; Bougen & Drury, 1980; Frecka & Hopwood, 1983; Ezzamel, Mar-Molinero, Beecher, 1987; Buckmasters & Saniga, 1990; Akintola, 1998). If refutation is admitted, then it suggests that industry norm ratios cannot be established for performance evaluation. The idea beneath the assumption of normality in the distributions of financial ratios is that few firms in an industry perform below and above expectation due to some minor variability in capital intensity among the firms but majority of the firms should attain average expectation, which is an ideal description for performance of any family of living things (*cf.* Moore, 1995, p.21). Therefore, the normal distribution provides a theoretical orientation which cannot be dismissed, but it cannot be verified also because phenomena are the outcomes of context-specific mechanisms (Pawson &Tilley, 1997). What is

logical to do is to ascribe non-normality in observed data to some black box that one can fiddle to achieve desired results. Transformation and winsorizing are suggested methods to restore normality but this would suggest that industry norms do not apply to all firms in an industry; for example, distress firms or highfliers but they belong to the family. The elimination of outliers to restore normality would have been a legitimate thing to do if ratio norms were to apply to different industries: pigs, pears, pipes, peas and prickets may be temporarily transformed to pounds sterling or the US dollar due to heterogeneity but this becomes illogical when the objects are of the same species. Thus, if the normative or positive use of financial ratios is a desired objective then management must order transactions to conform to normality rules, or standard setters must observe normality rules when formulating accounting standards.

Non-normality, and hence instability, in the distributions of financial ratios has been ascribed to differences in size of firms (Horrigan, 1965). The International Accounting Standards Board, or the IASB, develops separate accounting standards for small-medium and large firms in order to sustain the normality assumption. Moreover, differences in size of firms become constant when the relationship between two variables from financial statements is expressed in the form of a ratio, and this rules out 'size' as an explanatory factor for non-normality. Also, Horrigan proposes differences in accounting methods as a cause of non-normality but the application of accounting methods in an industry is a constant because custom and habit explain practices within an institution (Potts, 2007), suggesting that within an industry practices should become stable. Another explanatory factor for non-normality and instability is the presence of outliers in a financial ratio distribution (Deakin, 1976; Frecka & Hopwood, 1983; Martikainen, Perttunen, Yi-Olli & Gunasekaran, 1995). An outlier is a ratio either far below or above the industry norm,

suggesting that it requires the existence of an industry norm to identify outliers. The standard practice is to establish the industry norm for a ratio using only healthy firms. Once this has been done, it becomes unjustifiable to spot some observations as outliers for they all belong to the family (that is the industry). The standardization of accounting practice which is driven by the IASB should help detect outliers and hence contributes to efficient functioning of capital market because an efficient market would reflect outliers in share market prices. Thus, industry ratio norms are required to improve capital market performance. A fourth explanatory factor for non-normality of a financial ratio is that the relationship between the components of a ratio is non-proportional (Barnes, 1982; Ezzamel, Mar-Molinero & Beecher, 1987). A ratio is a measure of some relationship between two components that are proportional; for example, the relationship between age and income can be expressed as a ratio provided age and income are proportionally related otherwise some other form must be estimated to express the relationship. Thus, the thesis is that when the relationship between the two components of a ratio is non-proportional, a cross-sectional distribution of the ratio would be non-normal. However, ratios calculated from financial statements do not violate the proportionality criterion because the accounting amounts constitute a system (*cf.* Most & Lewis, 1982, p. 31). To explain, age and income trail a pattern which constitutes a system, hence the relationship between age and income can be expressed as a ratio. Stated succinctly, when a pattern that constitutes a system exists, the proportionality assumption is not violated.

Based on the backcloth that the IASB standardises accounting practice among firms of similar sizes, it becomes important to establish whether financial ratio distributions differ under domestic accounting standards and the IFRS. The results would provide evidence to call for

industry norms to improve capital market efficiency, and hence sustains the dogged pursuance of accounting change by the IASB. Industry norms help the market to fully reflect news about a company's performance, and outliers quantify the magnitude of news effect (*cf.* Beaver, 1968; O'Connor, 1973; Barnes, 1987), hence industry norm ratios are imperatives to sustain the IASB's touted benefit of capital market efficiency arising from the adoption of IFRS. It requires an industry norm to detect outliers. Moreover, the results would have implications for the development of a surrogate financial ratio in each financial ratio group; for example, if the financial ratio distributions under IFRS are more temporally stable and this turns up in the form of group stability, then this would be 'hard evidence' to develop a representative ratio in each group for financial modelling.

2.5.3 **IFRS and Value relevance**

Value relevance of accounting data has become a topical issue in accounting literature due to the global adoption of the International Financial Reporting Standards. The premiss that underlies value relevance test is that accounting data are more informative to investors if they exhibit a higher association with share prices, stock returns and cash flows (Lang, Raedy & Wilson, 2006; Barth, Landsman, Lang & Williams, 2012). The value relevance concept is based on perception of market participants on firms' economic position and performance overtime which the financial reporting system discloses. Investors monitor share prices, calculate stock returns, and observe cash flows from operation to form perception on performance of firms. The critical mandate of studies on value relevance is to detect under which regulatory regime is value relevance higher, suggesting that the financial reporting system is the cause of 'higher/lower value relevance'. The consistent networks of testing value relevance models have been to

compare explanatory power and/or regression coefficients of the model used, and conclude on which regulatory regime produces higher value relevance. This working method fails to take us far enough to make complete descriptive statements about value relevance; for example, is the financial reporting system the only explanatory factor for difference in value relevance? If the answer is negative, what amount of value relevance is attributable to other information not captured by the accounting amounts? If IFRS accounting policies provide more information to market participants, then what is the exact amount of difference in value relevance? Answers to these questions are required to describe 'what happens' to value relevance because as Ohlson (1995) points out, information about the future prospects of the firm is not recognised in the financial statements. Prior studies specify the popular price model, omitting other information available to market participants which may not have been reflected in accounting amounts used for the value relevance model (Myers, 1999). Prior studies tend to use six months share prices after the fiscal year end so that information is fully available to market participants but even at that future prospect of the firm is not captured by the accounting amounts in the value relevance model (Ohlson, 1995, 2001). It is important to detect the value relevance attributable to the future prospect of the firm by market participants but no prior studies reported such values or the amount by which value relevance differs. Prior discoveries may have been made in the peripheral shadows inasmuch as these studies fail to specify the amount of value relevance attributable to the financial reporting system and other information not reflected by accounting amounts used in the value relevance model or the exact amount by which value relevance differ between the regulatory regimes. This explanation is a necessary condition to draw inferences on value relevance based on the financial reporting system, assuming arguendo that accountants are free to make value statements from the results of a model. A sufficient condition would be to

allow the financial reporting system to prance about in the research setting so that the value relevance models become predictors. Put in a research question format, 'if market efficiency is kept constant and the financial reporting system is allowed to vary in the background of the experiment, does a value relevance model hold? If the answer is affirmative then value relevance model should predict the financial reporting system under observation. This predictability test is a sufficient condition to check on the findings in accounting literature especially when these studies infer less accounting quality to the IFRS or the domestic accounting standards (for example Barth, Landsman & Lang, 2008).

This study estimates value relevance of earnings and changes in equity for Nigerian domestic accounting standards and IFRS and equalize background to detect the extent to which the financial reporting system explains difference in value relevance. Barth, Landsman, Lang & Williams (2012) use a regression of stock price on equity book value and net income, stock return on net income and change in net income, and future operating cash flow on net income. All models were used in this study but only the popular price model has explanatory power to predict value relevance in both regimes. The price model was estimated separately for each regulatory regime and evaluated in terms of explanatory power and regression coefficient of earnings and book value; then, the price model was applied to estimate the amount of value relevance for each regime. Next, the financial reporting system of IFRS is made to play by the rules of Nigerian domestic accounting standards (hereafter, 'NG-GAAP') on the thesis that if the financial reporting system is the only explanatory factor for the difference in value relevance then the amount of value relevance should now equal that for the NG-GAAP otherwise some other factor is beneath value relevance of accounting amounts. Furthermore, the price model was

made to predict the regulatory regime for which it applies following a logistic approach. The study finds that value.

This study is the first to offer a complete description of value relevance attributable to the financial reporting system. Moreover, the topic of value relevance of accounting amounts has not been investigated in Nigeria, and this is a glaring hole in the literature because the informativeness of accounting amounts varies among market participants in countries around the globe (Anandarajan & Hasan, 2010).

2.5.4 **IFRS and Earnings management**

The use of opportunistic discretion, which is due to allowable alternatives in the financial reporting system, to manipulate the stream of earnings to attain a target is referred to as earnings management. The medium for earnings management is the financial reporting system which has accounting standards as the datum of accounting measurement. A fundamental question is, 'why do managers of firms mask performance through the financial reporting system?' The obvious answer is that there are allowable alternatives in the accounting standards which offer opportunity to manipulate earnings, and managers do because they want to increase their compensation (the bonus hypothesis), avoid a breach of debt covenants (the debt hypothesis) or avoid the transfer of wealth to external parties (the political hypothesis), or seek external recognition in the capital market (the market hypothesis) (Fields, Lys & Vincent, 2001), or exploit the minority shareholders. The fundamental question now boils down to whether the removal of accounting alternatives (or accounting choices) from the accounting standards can eliminate earnings management? The answer is that accounting standards cannot be devoid of

choices because they must be principles-based but what is possible is to limit the choices to those that fully reflect a firm's economic position and performance, and this is what the International Financial Reporting Standards are. The IFRS eliminate or remove allowable accounting alternatives that fail to reflect the underlying economics of a firm and require accounting measurements that better reflects a firm's economic position and performance (Barth, Landsman & Lang, 2008). Even at that, the allowable choices may not portray the same picture of the underlying economics of a firm. Moreover, the accountants who prepare the financial statements for managers might not comply with the IFRS on instruction of management, for accountants eat with kings even though they are not kings, especially when enforcement mechanisms are weak (for example the external audit function, market regulation, absence of corporate governance rules) or the judicial system is inefficient.

The topic of earnings management becomes topical in accounting literature because the 2007−2009 financial crisis is linked to deficiencies in accounting standards (McMahon, 2011). Consequently, it becomes important to establish whether the current international accounting standards eliminate the opportunity to manage earnings. A supporting theory is that the IFRS require recognition of accounting amounts that are intended to faithfully represent a firm's underlying economics and remove allowable accounting alternatives that do not reflect a firm's economic position and performance; however, an opposing theory is that the flexibilities of the IFRS prop up opportunity to manage earnings (Barth, Landsman & Lang, 2008; Capkun, Collins & Jeanjean, 2012). The IFRS, like many domestic accounting standards of developed countries which are independently developed of the international standards, are principles-based, suggesting that preparers of the financial statements interpret, examine the circumstances, and

select an accounting choice from the alternatives allowable. Nevertheless, if it is correct that IFRS retain only alternatives that fully reflect a firm's economic position and performance, then, irrespective of the accounting choice, the IFRS should lead to less earnings management, assuming arguendo that accountants who prepare the financial statements for management comply or institutional mechanisms are strong and the judicial system is efficient.

The results of the literature reviewed have revealed that many country-specific studies on earnings management are methodologically flawed with the inclusion of both voluntary and mandatory adopters. Only Christensen, Lee, Walker & Zeng (2015) take this fundamental omission into account. Also, this study takes this methodological flaw in country-specific studies into account. Only firms that adopt the IFRS after the mandatory pronouncement provide data for the analysis. However, unlike Christensen, Lee, Walker & Zeng's study, the domestic accounting standards of Nigeria are adaptation of the old IAS, domestic accounting standards that were developed independently of the old IAS. In China (as an example) where the domestic accounting standards differ vastly from the old IAS, Liu C., Yao, Hu, and Liu L. (2011) detect less earnings management and higher value relevance. Ames (2013), in South Africa, detects no evidence of less earning management because the national accounting standards harmonized with the IFRS to a large degree. This country-specific study is different: (1) Nigeria adapted the old IAS to suit the perverse behaviour of businessmen in the country (culture) and to catch up with economic development (for example instability in prices), and (2) unlike South Africa, the domestic standards were not updated by adapting the new IAS (or IFRS) to suit the peculiarity of the economy before the mandatory adoption. It is well to yield to the question of adapters because Larson (1993) finds that Africa countries that adapt the old IAS recorded higher

economic growth than countries which neither adopt nor adopt but fail to adjust. Two other studies which use adapters are those conducted by Elbannan (2011) in Egypt and Outa (2011) in Kenya, and in both studies, there was no evidence of less earnings management. The orientation of Egyptian firms is debt-financing and this must have accounted for the results. In Kenya, the IFRS lack legal backing; moreover, there is gross shortage of qualified accountants in the country (Outa, 2011). All of these reasons account for the borderline discovering in the two adapters countries. Rao & Warsame's study (Rao &Warsame, 2014), which pulls firms across adapter countries, suffers from poor design. Nigerian firms (as an example) were not represented in their study because the country adopts IFRS in 2012: their study uses 1995 to 2005 data, and before the mandatory adoption in Nigeria, only one oil firm (Oando Plc) and about five banks voluntarily adopted IFRS, and even the latter were excluded in their design. In blunter terms, the study fails to capture Nigeria and, perhaps, several other African countries. Moreover, voluntary and mandatory firms were included in both pre-and-post IFRS dichotomy of their design without a control for their interaction (*cf.* Houqe, Easton & Zijl, 2014; Christensen, Lee, Walker & Zeng, 2015). Furthermore, a sample with few representative firms from each country lacks valid generalization at both the country and regional levels.

2.5.5 **IFRS and Capital maintenance**

Capital maintenance is a key concept of the International Financial Reporting Standards, or the IFRS; for example, the preparer of the financial statements (hereafter 'management') is required to provide summary quantitative data about what is being managed as 'capital' (*see* IAS 1). However, there is a major concern that the IFRS do not take sufficiently into account the concept of capital maintenance (Bloom, 2011; Strampelli, 2011) due to fair value accounting. The thesis

is that fair value losses reduce the value of a company's assets as well as net income. A persistent fall in market value of a company's assets will reduce capital to a level that shareholders might begin to consider recapitalisation, re-organisation or liquidation, even though the company did not actually suffer the losses, for the decline in market value may be due to some temporary events—external or internal. In the same vein, fair value profits increase the assets value of a company as well as net income, and this can influence the amount of cash dividend paid to shareholders. In a word or two, the distribution of dividends from profit that is influenced by fair value profit does not protect creditors of the company; contrariwise, the distribution of dividends from profit that is influenced by fair value loss is exploitative of shareholders. Thus, there is some truth in the statement that fair value profit or loss might influence the payment of dividends and this would not be in consonance with the notion of capital maintenance (Jermakowicz, 2004; Strampelli, 2011). Therefore, it ought to be detected whether changes in dividends correlate with changes in unrealised profits or losses. The thesis is that if changes in dividend paid are associated with changes in unrealised profit, then there is evidence that unrealised profits influence the size of dividend paid to shareholders. It may be argued, however, that fair value profits or losses do not affect or alter the cash position of a company but if a company has sufficient cash to back up profits, management might be tempted to pay dividends that are financed by unrealised profit, hoping that such an action will elevate their stock prices (*cf*. Bloom, 2011).

The IASB appears inactive about the allegation of inadequate attention to the capital maintenance system because the sole purpose of the financial statements is to inform, not to

determine distributable profit or erosion of subscribed capital. To quote Hans Hoogervorst, chairperson of the IASB:

> (…). I share the concerns of those who are worried about excessively generous dividends and unjustified share buy-backs. But this should not be dealt with by phoney accounting. It should be dealt with by legislation and by regulators as is the case in most countries in the world (IASB Speech, 2015).

This escapist argument, however, is not catching on insofar as the financial statements remain the only valid instruments to determine distributable profits or impairment in subscribed capital due to losses. Nevertheless, assuming arguendo that the IASB is correct, then disclosure to inform should be complete; for example, the statement of changes in equity discloses the value and structure of owners' equity as well as its changes over a period but it fails to align any changes in capital with changes in circulatory working capital, as working capital is the means by which management increases equity capital. As Abdel-Khalik (2011) observes, accountability is not stewardship; therefore, providing summary quantitative data about whatever is managed as capital is accountability but lacks explanations for how capital is managed. The statement of changes in equity is fundamental because the long-term financial goal of a business entity is increase in equity (Nowak, 2013) but additional disclosure on stewardship is important to check on management's claim of whatever is reported as capital maintenance. The accounting standards recognise innovative qualities so that origin and persistence of accounting practices could come to play (Hopwood, 1987) but there is the need to provide data for shareholders to adjudge whether management claims of capital maintenance is real. The accounting profession has suffered scandals in the past due to collapse of companies in the face of 'good accounting figures'; therefore, what the accounting profession needs is a reporting model that is based on accounting practices relevant to both management strategies and accountability. Management

has a freedom to act, implying that management can apply strategies to increase resources; however, there should be congruency between managerial strategies and increase in resources as a test of transparency and accountability (stewardship), which in the first place led the IASB to increase the disclosure requirements. The IFRS Conceptual Framework holds that the objective of financial reporting is to provide financial information that is useful in making decisions and in evaluating whether the management has made efficient or effective use of the resources entrusted to it. In some other words, the IFRS Conceptual Framework emphasises decision usefulness and stewardship. If this inclination is correct, then it ought to be detected whether management's claim of capital maintenance is supported by its managerial strategy. The thesis is that if managerial strategy corroborate management claim of capital maintenance, then the statement of changes in equity provides sufficient information on the maintenance of subscribed capital and this would sustain the inactiveness of the IASB.

Furthermore, the concept of capital maintenance holds that in order to protect creditors, dividend should be paid out of profit, not capital. This suggests that profit should be determined at the end of a target period to decide on the amount of dividend to pay shareholders. The literature documents two methods of profit determination: (1) the surplus approach, and (2) the double account system. The former method values assets and liabilities at market prices and determine profit as the difference in net asset valuations adopted at the beginning and end of the financial period (Kehl, 1976). In contrast, the double account system places most importance on the financial transactions in which the specific reporting entity is directly involved, and little or no emphasis on the current market values of assets, particularly non-current assets. The double account system is driven primarily by the convention of revenue recognition and the matching

principle of relevant costing (Ardern & Aiken 2005), and the production of a detailed profit or loss statement is integral to the objective of the double entry system, namely, to demonstrate stewardship or accountability about how capital raised by companies is used, and to distinguish capital from revenue expenditure (Morris, 1993).

The accounting profession had rejected the surplus approach on grounds that it fails to match periodic costs against revenues (Ardern & Aiken, 2005) but fair value accounting and the requirement to provide summary quantitative data on capital that is claimed to be maintained (IAS 1) are characteristics of the surplus approach (Jones & Aiken 1994); thus, there is a paradigm shift from the double account system to mixed methods. The codification of fair value rules in *IFRS 13* to avoid the touted abuse (kaya, 2013) substantiates the paradigm shift assertion but remains an open ground for mischief because a value assigned on what an asset would be sold for is hypothetical and subjective no matter the activeness of the market (King, 2008). Therefore, it ought to be determined the extent to which fair value accounting has closed the gap between the surplus and double account system.

The motivation for this study came from the IASB claims to work in the public interest by fostering trust, growth and long-term financial stability in the global economy (IASB Speech, 2015). This claim calls for empirical evidence if the IASB's claim of transparency, accountability, and efficiency is to be admitted as real. Thus, the study tests whether the codification of fair value accounting has reduced subjectivity; whether fair value losses and profits influence dividends distribution; and whether managerial claim of capital maintenance aligns with managerial strategies. On the first objective, the distribution of net income plus tax expense under the double entry and the surplus methods were compared to learn the extent to

which fair value accounting has closed the gap between the two methods of profit determination. The thesis being that if the gap is insignificant then there is objectivity in fair value accounting. It is fair to generalize the two approaches because items in the statement of profit or loss are at current prices, and with fair value accounting, the net assets are also at current prices. Moreover, fair value gains and losses are now recorded in the income statement so that any significant difference will indicate the extent to which management's estimate of fair values is subjective. On the second objective, the study correlates changes in dividends with changes in unrealized profit or loss, the thesis being that if changes in unrealized profit are associated with changes in dividends paid, then there is some evidence that unrealized profit or loss influences the size of dividend paid to shareholders. On the third objective, the critical mandate is to explain stewardship in terms of capital maintenance and managerial strategy, the thesis being that if management's claim of capital maintenance is genuine then changes in equity should correlated with changes in working capital since the circulation of working capital is the means by which management can increase capital, and this would signal stewardship to market participants, and hence explains value relevance of stewardship. Cross-sectional distributions of changes in equity and changes in working capital were correlated to learn the extent to which management's claim of capital maintenance agrees with the strategy on ground to increase capital resources. Then, a regression of stewardship on changes in equity (capital maintenance) and changes in working capital (managerial strategies) was embarked upon to explain value relevance of management's stewardship.

2.5.6 **IFRS and economic growth**

The International Accounting Standards Board, or the IASB, argues that the IFRS accounting policies are indirect drivers of economic growth (IASB Speech, 2015). The thesis is that

international investors lack sufficient information to evaluate a country's market, resources or efficiency of management; hence, the IASB intervened to set minimum disclosure requirements, which should reveal all strands of information necessary to make investment decisions. In concrete terms, IFRS accounting policies increase information disclosure and, hence, reduce the information gap between principal (investors) and agents (management) but whether this reduction in information asymmetry leads to higher economic growth is an empirical question.

The explanation of the IASB is grounded on the principal-agency framework. The principal needs information about the business of the enterprise and the agents satisfy this need by financial reporting but agents can be economical with the truth because of goal conflict, which leads to expropriation. Increased disclosures reduce expropriation; hence, IFRS is seen to reduce agency costs. The mechanisms of corporate governance are seen to be inadequate or inefficient. Internal and external auditors are mechanisms to check on management's expropriation but human beings are sometimes competitive, sometimes collaborative, often both (Waring, 1973). Even the board system is deficient. Boards are redundant when there is a dominant active shareholder (Brewer, 1997). The introduction of audit committees into the mechanism of corporate governance does not raise the serpent tail above waters for members are directors and sponsored shareholders who are in no technical position to detect the truth. Therefore, mechanisms of corporate governance need to be complemented with adequate information disclosure to reduce the risk associated with uncertainty, and this should attract capital to the domestic market, and hence economic growth. With low level of disclosure or weak enforcement mechanisms of corporate governance, international investors are not willing to enter into the

market and for investors who do not care a damn they demand higher risk premium but with IFRS disclosure compliance, information is readily available to make investment decisions.

The results of the few empirical prior studies conducted on this research assignment corroborate the IASB's claim though, in some cases, with a rider; for example, Larson (1993) detects higher economic growth only when the IFRS are adjusted to meet the peculiarities of the economy; Gordon, Loeb & Zhu (2012) detect higher economic growth only for developed countries. This study re-checks the results of prior studies on the research assignment that IFRS accounting policies lead to higher economic growth. The thesis is that if IFRS is the real driver of economic growth, then the contribution of firms to the gross domestic product at adoption should be equal on the average otherwise the detected economic growth may be more apparent than real—a spurious growth. In other words, because IFRS adoption affects the accounting amounts, national income statistics are also affected but this might not suggest higher economic growth. The motivation for this study is that international investors use the gross domestic product to gauge a country's markets and resources (Gordon, Loeb & Zhu, 2012); therefore, if IFRS adoption alters the value of the gross domestic product, then the much touted internationalization advantage of the IASB, is affected negatively. The value added of each firm is the contribution of each firm to economic growth (Asechemie, 1996, p.144). Thus, the study compares the value added by each firm to the gross domestic product when domestic accounting standards and IFRS were used to prepare the financial statements. The idea beneath this test is that it is valid to compare economic growth if accounting standards do not distort the national income statistics at equilibrium otherwise results from comparison of economic growth are spurious.

Companies report value added to the gross domestic product via the statement of value added but the IASB excludes this fundamental statement from the requirements of external financial reporting:

> Many entities also present, outside the financial statements, reports and statements such as environmental reports and value added statements, particularly in industries in which environmental factors are significant and when employees are regarded as an important user group. Reports and statements presented outside financial statements are outside the scope of IFRS (IFRS Foundation, 2014, p. A593).

Yet, the Board claims to develop accounting standards that facilitate the preparation and use of national income statistics. How? The Accounting Standards Steering Committee (1975) had recommended the statement of value added or, simply 'the VAS', to cater to this objective but the IASB conceives of this statement as being outside of the corporate financial statements. In the enterprise theory of the firm, the firm is seen as a social institution operated for the benefit of many groups in society: shareholders, employees, government, customers and creditors. The VAS is the only financial statement that operationalises this social responsibility concept of the enterprise (Hendriksen, 1977, p.494). Using value added of each firm to determine the national output avoids double counting which results from the sale of intermediate goods between industries (Asechemie, 1996, p. 150). Thus, if all companies in a country prepare a statement of value added, the process of national income accounting would be facilitated.

The VAS is too important for the IFRS Foundation to declare optional. First, it provides data on factor substitution within a firm. To illustrate this point, consider the sample VAS at Figure 2.2. Using these data, labour lost one per cent point from 31 per cent in 2011 to 30 per cent in 2012; expansion and maintenance lost 5 per cent points from 26 per cent (that is 18% + 8%) in 2011 to

21 per cent (that is 12% + 9%) in 2012. The ground lost by labour and expansion/maintenance is gained by the government and capital provider. Government gained 4 per cent points from 5 per cent in 2011 to 9 per cent in 2012; capital provider gains 2 per cent points from 35 per cent (that is 10% + 25%) in 2011 to 37 per cent (that is 4% + 33%) in 2012.

Figure 2.2
Sample Value Added Statement

	2012		2011	
	Amount*	Proportion	Amount*	Proportion
Revenue	116,707,394		97,961,260	
Bought in materials and services				
−local	(46,427,944)		(38,834,195)	
−imported	(27,267,205)		(23,209,890)	
	43,012,245		35,917,175	
Finance income	909,074		23,758	
Value Added	43,921,319	100%	35,940,939	100%
Distribution of Value Added:				
To Employees:				
Wages, salaries & end of service benefits	13,248,045	30%	11,304,927	31%
To providers of Finance:				
Interim dividends	1,188,984	3	1,188,984	3
Finance costs	1,848,471	4	3,338,782	10
Government as taxes	3,832,968	9	1,702,580	5
Retained in the business:				
Depreciation	3,935,671	9	2,993,306	8
Amortization	105,390	−	105,390	−
Proposed final dividend	14,664,141	33	8,758,852	25
To augment reserves	5,097,649	12	6,548,112	18
Value Added	43,921,319	100%	35,940,933	100%

Source: Nestle Nigeria plc, Annual Report and Accounts for the year ended 2012
*Amounts in thousands of Naira.

Though these strands of evidence do not suggest factor substitution, a decrease in labour share overtime without a corresponding increase in the share of other factors would signal a shift from manual to technological base process. With the current insights, nevertheless, the increasing share of government has to be justified otherwise it would be reduced in some realistic manner; for example, by a renegotiation of wages and salaries or, perhaps, indulge in some tax evasion if labour were silence. Second, the VAS provides data to study import substitution. The format of

the VAS, recommended by the Accounting Standards Steering Committee ([ASSC] 1975), requires purchases of goods and services to be separated into import and local value. This division permits a ratio of local to import materials and services to be calculated as a measure of self-reliance, or the extent to which the local content of goods manufactured in a nation is increasing over time. Moreover, the division provides a measure of inter company economic integration which is important for the internalization of the multiplier, for if companies within a country patronize one another, the value of the country's national product will increase.

Third, the VAS provides data to gauge performance and activity of companies (ASSC, 1975, p.49); for example, the figure for value added is a pointer to the net output of the firm, and by relating other key figures such as capital employed and labour costs to it, significant indicators of performance may be obtained. Summarily put, the VAS is a viable source of national income statistics and metrics of social accounting, including performance measurement. The IASB's exclusion of the statement from the requirements of external financial reporting amounts to misuse of the world's mandate of standard setting.

Nevertheless (and this is crucial), companies operating in Nigeria are complying with the nation's company law requirement, that is, the Companies and Allied Matters Act (CAMA) to produce a statement of value added as a component of annual financial statements. This provides a research opportunity to compare the value added figures for NG-GAAP and IFRS at adoption.

2.5.7 **Corporate social responsibility disclosure**

Information on corporate social issues is needed to assess risks that might affect the company's operations; for example, existing and potential investors would like to know the relationship of

management with customers, employees and the host communities to choose less risky investment portfolios. Thus, corporate social issues can affect a company's valuation. However, the International Financial Reporting Standards, or the IFRS, omit corporate social disclosure in corporate financial reporting on grounds that the issues are outside the financial statements (IFRS Foundation, 2014). This view might have arisen due to the practice in the United Kingdom where environmental accounting reports are presented in separate volumes from the financial accounts. This practice, however, does not rule out the possibility of integrating social disclosures into financial reports; for example, the policies relating to social accounting may be presented in the part dealing with Statement of Accounting Policies, the Notes on the Accounts may show any material contingent liabilities in respect of social matters, and the financial statements can include social responsibility cost as part of administration expenses. The Chartered Association of Certified Accountants in the United Kingdom organizes 'Green Accounting' competition to stimulate progressive practice among firms in environmental accounting, and this may have influenced the creation of a separate volume for environmental accounting.

The International Accounting Standards Board views external financial reporting as a private contract between the management and the owners of the entity (the classical perspective) but believes that corporate financial reporting should also service the financial markets through the provision of information relevant for economic growth and development (the market perspective). However (a very important 'however'), it is well to yield the focus of the entity itself. The Accounting Standards Steering Committee writes:

> Economic entities compete for resources of manpower, management and organizational skills, materials and energy, and they utilize community owned assets and facilities. They have a responsibility for the present and future livelihoods of employees, and because of the interdependence of all social groups, they are involved in the maintenance of standards of life and the creation of wealth for and on behalf of the community.

This ecological view of the Accounting Standards Steering Committee cannot be dismissed because the reporting organization is located within a complex ecology of mutual dependence, interacting with people, material environments and other organizations. In these interactions, the reporting organization takes from and gives to its ecology in both obvious and subtle exchanges. Thus, the reporting organization has a responsibility towards all elements of its ecology, not only towards its owners. The United States has a corporate social performance agenda touching on employee welfare, environment, sex discrimination, equal opportunity, racial discrimination, product quality, safety and drugs. In Nigeria, like the United Kingdom, public policy emphasizes employee welfare and environment. In the area of employee welfare, legislation has gone beyond the usual labour laws to require management to report on its treatment of employees in annual financial reports. There are also pieces of legislation regulating industrial pollution even though there is no requirement to report on activities connected with pollution in financial statements. Although there are laws and programmes intended to reduce the drug problem, which has caused much damage to Nigeria abroad, there is no discernible evidence that drugs and women affairs are legitimate elements in corporate social performance that require reporting in annual financial statements.

Social issues in corporate financial reporting fall within the domain of social accounting, which is a branch of corporate accounting that reports on the responses of corporate entities to social concerns (Asechemie, 1996, p.7). These concerns, which cover social and environmental, vary

from one society to another so that each society must establish the limits of social concerns that corporations are expected to report on. Then, social accounting should proceed to set out the items to be disclosed in corporate reports, the valuation principles applicable to those items, and the format for the disclosure. Appropriately, Nigeria has established the social issues of concern that corporate entities must report on (Companies and Allied Matters Act [CAMA], Schedule 5, part III) but there is no adequate responsive social accounting by the accounting profession in Nigeria. The Nigerian Accounting Standards Board, or the NASB, specified the content and format of the statement of value added, which is a financial statement in social accounting, but fails to specify the contents and format of items of corporate social responsibilities. As a result, companies develop templates that carry the descriptive, qualitative information set out in CAMA. This was very unsatisfactory state of affairs. Succour came to the accounting profession when the National Planning Commission adopts the minimum environmental and social disclosure requirements of the United Nations for all corporations (‘Nigeria First’, 2008); however, the adoption was more in principle as the NASB never took up the enforcement responsibilities. Therefore, whether the companies implement the adoption of the corporate social disclosure of the United Nations is an empirical question. Moreover, the voluntary declaration of the International Accounting Standards Board on corporate social disclosures has expanded the complexity of this empirical question, which is fundamental because the Financial Reporting Council of Nigeria, which replaces the NASB, is silent on the declaration, suggesting that compliance with corporate social disclosure is optional. Few studies have investigated compliance with the corporate social disclosure of the United Nations. Reverte (2009) investigates characteristics that explain disclosure practices; Iatridis (2013) examines association between environmental disclosure, performance and corporate governance; Van der Laan,

Gouldman and Tondkar (2014) compare compliance of shareholder-oriented countries with compliance of creditor-oriented countries. The objective of the present study is different: it examines compliance with the corporate social disclosure of the United Nations and whether the IASB voluntary declaration detracts from compliance. This is fundamental because the United Nations can use the results to evaluate the extent to which listed firms in Nigeria are willing to comply with the corporate social disclosure requirements for all corporate entities.

CHAPTER THREE
METHODOLOGY

3.1 Design of the Study

There are seven research questions and hypotheses in this study; therefore, separate designs were conceived for each research question and the corresponding hypothesis. The scope of the research question and the hypothesis dictate the design that was conceived to accomplish the purpose. Generally, the study is an event study, where the event of study is the adoption of the International Financial Reporting Standards (IFRS). Event study takes an experimental design of either pretest-posttest design or posttest design only. In this study, both were adopted, depending on the nature of the research question and the hypothesis. In the case of the pretest-posttest design, data were collected on each of the variables that characterise the adoption of the IFRS before and after the adoption, and changes in the variables were observed to learn any effects. The pretest data were obtained from the financial statements prepared under Nigerian domestic accounting standards whilst the posttest data were obtained from the financial statements prepared using the IFRS accounting policies. The firms and their transactions remain the same; therefore, the accounting amounts and their quality should be the same, and if there are any differences, then the experimental treatments should be the cause of the differences. An intervening event is an experiment; therefore, the introduction of the IFRS constitutes an experimental treatment; for example, companies were preparing financial statements using Nigerian domestic accounting standards; then, IFRS is introduced and the same companies were mandated to restate the financial statements earlier prepared using Nigerian domestic accounting standards to IFRS financial statements. Thus, there is repeated measurement on the same transactions but under different rules or regimes. Since both the companies and transactions are the same, each company, therefore, acts as its own control. In other words, a company in the

design provides both experimental and control data for analysis where the control data are the pretest and the experimental data are the posttest. With some research questions and hypotheses, only a posttest design is used, meaning that the data were collected from the financial statements prepared after the adoption of the IFRS accounting policies.

The IFRS was mandated for listed companies in 2012 fiscal year, in which case, these companies were required to implement IFRS retrospectively to the opening financial statements. The statement of financial position or the balance sheet must show the current period (that is 2012 fiscal year) and two comparative periods (that is 2010 and 2011 fiscal years). The income statement must show the current period (that is 2012 fiscal year) and one comparative period (that is 2011 fiscal year). So also is the statement of cash flow. This mandatory preparation of financial statements for the year of adoption provides both pretest and posttest data for analysis. In the case of pretest-posttest design, a univariate analysis was conducted but for posttest design, a multivariate analysis was embarked upon. However, there are cases when both univariate and multivariate analyses were triangulated for reliability of results; for example, if the test of a hypothesis involves comparing correlation coefficients of variables in the pretest and posttest, a temporary transformation to Fisher *z* is done, and if appropriate, a multiple regression analysis is embarked upon. The reason for this treatment is that there are many ifs and buts that bedevil the use of correlations; for example, comparing correlation requires one to calculate the standard error between coefficients but the standard error of the Pearson correlation depends on itself and the sample size, and this makes the correlation approach rather messy. Moreover, differences of correlation demands rather large samples if they are to be convincingly different from chance differences (Burroughs, 1975, p.27). The data distributions are cross-sectional, not time series.

This means that each company in the sample provided a single year data for analysis. Even in cases where a company provided several years data, a pooled cross-sectional analysis, not panel, was embarked upon. In the remainder of this section, the specific design that applies to each research hypothesis is presented and explained to understand the testing procedure.

H_{01}: The transition to IFRS does not affect the financial statement elements, the ratios and the conservatism paradigm.

Table 3.1 is the design layout to test this structural hypothesis, which has been expressed in the nullifiable form.

Table 3.1
Cross-sectional data structure for testing H_{01}

	Financial Reporting System		
Listed companies	NG-GAAP	IFRS	Change effect
1	data	data	data
.	.	.	.
.	.	.	.
.	.	.	.
n	data	data	data

Source: Researcher's conceptualisation, 2015

The data are aggregate assets, liabilities, equity, income, and ratios selected from profitability, liquidity, and solvency. The change effects are differences. Some companies in the sample will have a decrease in their financial statement elements and some an increase. The significance of the difference between the number of firms that observe decrease and increase is tested using the Wilcoxon signed rank test at alpha level of 5 per cent. On the question of whether the IFRS has shifted the accounting measurement paradigm from conservatism to valuation, a conservative

index (*CI*) was calculated for each financial statement elements affected by the transition, following Gray (1980). A *CI* for total assets, for example, was calculated as:

$$\mathrm{CI\,(TA)} = 1 - \frac{\mathrm{TA_{NIG}} - \mathrm{TA_{IFRS}}}{\left|\mathrm{TA_{NIG}}\right|}.$$

According to Gray, the CI describes economic measurement behaviour of the accounting profession. A *CI* less than 0.95 indicates conservatism (signed −), suggesting that IFRS adoption has no effect on conservatism. On the other hand, a *CI* greater than 1.05 indicates optimism (signed +), suggesting that IFRS adoption affects the conservatism concept; and a *CI* that falls within the range of 0.95−1.05 (signed 'zero') indicates that IFRS adoption does not make the accounting profession conservative or optimistic(that is neutral).

H_{02}: The distributional forms and stability of the financial ratios do not differ under Nigerian domestic accounting standards and the IFRS.

The design layout conceived to test this hypothesis is presented at Table 3.2.

Table 3.2

Data layout for testing H_{02}

	V1	V2	V3	.	.	.	V9
V1	data	data	data	.	.	.	data
V2	data	data	data	.	.	.	data
V3	data	data	data	.	.	.	data
.	.	.	.	.	.		.
.	.	.	.	.	.		.
.	.	.	.	.	.		.
V9	data	data	data	data	data		data

Source: Researcher's conceptualisation, 2015

The design layout at Table 3.2 was implemented separately for each regime (that is NG-GAAP and IFRS). In other words, analysis was conducted separately for each regime to determine group stability and temporal stability. V1, V2, V3 . . . V9 are financial ratios selected from profitability, liquidity, and solvency groups. The data are correlation coefficients secured under the analytical scheme of factor analysis. The measures of each financial ratio were intermingled and rotated to determine their factor loadings, which were used to determine group stability. On temporal stability, the standard deviations of each cross-sectional distribution were compiled and observed to learn whether the trend is stable overtime. On the question of whether the distribution of ratios approximates the normal distribution, the efficient Shapiro-Wilk test was conducted as a test of strict normality, whilst the ratio of moment coefficient of skewness to the standard error was used to conclude whether approximate normality exists in any ratio distribution.

H_{03}: There is no significant difference between the value relevance of the accounting amounts under Nigerian domestic accounting standards and the IFRS.

Table 3.3 depicts the design structure conceived to test H_{03}.

Table 3.3
Design structure for testing H_{03}

		NG-GAAP	IFRS
Price model:	$\hat{P}_{it} = \hat{\beta}_O + \hat{\beta}_1 BVE_{it} + \hat{\beta}_2 NI_{it}$	data	data
Stock return model:	$\hat{R}_{it} = \hat{\beta}_O + \hat{\beta}_1 [NI_{it} / P_{it-1}] + \hat{\beta}_2 [\Delta NI_{it} / P_{it-1}]$	data	data
Cash flow model:	$\hat{CF}_{it} = \hat{\beta}_O + \hat{\beta}_2 NI_{it} / TA_{it}$	data	data

Source: Researcher's conceptualisation, 2015

The data are measures of value relevance. Following Barth, Landsman, and Lang (2008), value relevance models were used to secure data into the design for analysis. The models were

estimated for each regime. The mean value of each predictor was plugged into each estimated equation to obtain value relevance. Thus, the three models produce three values for value relevance, which were observed to learn the regime that produced the higher value relevance.

The financial reporting system is not the only factor that explains value relevance (Ohlson, 1995). Therefore, to learn the value relevance attributable to the financial reporting system, backgrounds were equalised: the mean of each predictor from the IFRS is plugged into the regression model for the NG-GAAP to obtain an average prediction, which should equal the average obtained earlier for the IFRS. Any difference in amount represents some other factors which account for difference in value relevance (for example market expectation of future prospect of the firm).

H_{04}: Earnings management under Nigerian domestic accounting standards and the IFRS do not differ significantly.

Table 3.4 presents the deign layout to test H_{04}.

Table 3.4
Design layout for testing H_{04}

	Financial Reporting System	
Listed Companies	NG-GAAP	IFRS
1	data	data
.	.	.
.	.	.
.	.	.
n	data	data

Source: Researcher's conceptualisation, 2015

The data are measures of changes in earnings deflated by total assets, changes in cash flow deflated by total assets, cash flow from operations deflated by total assets, total accruals deflated

by total assets, and discretionary accruals. These data entered into the design for analysis in two stages. At stage one, factors that influence earnings, cash flow, and accruals were allowed to prance about in the research setting; at stage two, the data were disinfected of possible background operational factors, which include size of firms, growth, turnover, and leverage (*see* Pandey, 1993, p.560). Discretional accruals were estimated using the cross sectional Jones Model (Jones, 1991). For each of the research variable (earnings, operational cash flow, total and discretional accruals), the standard deviations and means were calculated. If the magnitude of the standard deviation relative to the mean is high, then preparers are, perhaps, instructed to report within a constricted range, and this would be evidence of manipulating earnings to attain a target, and if not, then firms recognise losses as they occur. To probe further, the ratio of standard deviation of earnings to standard deviation of cash flow was examined on the thesis that if firms recognise large losses as they occur, then the ratio should be high otherwise low. To clinch these results, the frequency of small profit and large losses were observed in the earnings stream on grounds that if firms manipulate earnings towards a target, small profit should dominate otherwise large losses. These frequencies were compared using a logit model whereby the frequencies of small profit and large losses predict the regulatory regime.

H_{05}: IFRS accounting policies do not impair the capital maintenance concept in the accounting profession.

Three deigns were juggled out to test this hypothesis. Each design addressed a scope of the hypothesis. The first design (Table 3.5a) is the data structure to test whether fair value accounting practice is subjective. The net income before tax reported in the financial statements is the output of the double entry system. Comparative figures were calculated using the surplus

approach. Then, the Wilcoxon Z-test was conducted at 5 per cent alpha level to weigh the difference between the median net incomes. If the difference is non-significant, then fair value accounting is objective.

Table 3.5a

Testing whether fair value accounting practice is subjective for H_{05}

Listed companies	Double entry system (Earnings)	Surplus approach (Earnings)
1	data	data
.	.	.
.	.	.
.	.	.
n	data	data

Source: Researcher's conceptualisation, 2015

The second design (Table 3.5b) is the data layout to test whether fair value profit and losses influence dividend distribution. Changes in unrealised gains or losses and changes in dividends were calculated from the financial statements prepared for the period 2013 and 2014, and correlated following Pearson Product Moment procedure. A significant correlation coefficient indicates that fair value gains/losses influence dividend distribution.

Table 3.5b

Design layout to test whether fair value profits and losses influence dividend distribution for H_{05}

Listed companies	ΔUnrealised profit/losses	ΔDividend
1	data	data
.	.	.
.	.	.
.	.	.
n	data	data

Source: Researcher's conceptualisation, 2015

The third design (Table 3.5c) is the data structure to test whether reported increase in equity capital aligns with financial management strategy. Changes in equity and changes in working capital were calculated and correlated. A significant correlation coefficient indicates that

management claim of capital maintenance is supported by managerial strategy otherwise reported increase in capital lacks strategic sustenance, trust, growth or financial stability.

Table 3.5c

Design to test whether reported increase in equity aligns with financial management strategy

Listed companies	ΔEquity	ΔWorking Capital
1	data	data
.	.	.
.	.	.
.	.	.
n	data	data

Source: Researcher's conceptualisation, 2015

H_{06}: The value added of each firm to the gross domestic product does not differ significantly under the Nigerian domestic accounting standards and the IFRS.

Table 3.6 presents the data structure to test $H0_6$. The data are the value added to, or eroded from, the GDP at transition.

Table 3.6

Data structure to test H_{06}

Listed Companies	NG-GAAP (Value Added)	IFRS (Value Added)	Change effect (Differences)
1	data	data	data
.	.	.	.
.	.	.	.
.	.	.	.
n	data	data	data

Source: Researcher's conceptualisation, 2015

The change effects are the differences between the value added/eroded under NG-GAAP and IFRS. The significance of the change effect is tested using the Wilcoxon signed rank test.

H_{07}: The voluntary declaration of the IASB on corporate social disclosure does not affect compliance with the requirements of the CAMA and the United Nations.

The designed conceived to test $H0_7$ is presented at Table 3.7.

Table 3.7
Data structure for the test of H_{07}

Listed companies	Trade & Linkages	Employment & Labour practices	Welfare, health & Safety	Environment	Govt & Community
1	data	data	data	data	data
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
n	data	data	data	data	data

Source: Researcher's conceptualisation,2015

The financial statements prepared within the period 2010 to 2011 (pre-IFRS adoption) and 2013 to 2014(post-IFRS adoption) were read to spot items of corporate social disclosures. A spotted item goes into one of the five categories shown in the design (that is trade and linkages; employment creation and labour practices; welfare, health and safety; environment; and government and community contribution). Then, a compliance score was calculated for each category per company. Each company in the sample produces two compliance scores, one being for the period before the adoption and the other after the adoption of the IFRS. The Wilcoxon z-test was applied at the 5 per cent level to weigh the difference in compliance scores. In addition, a regression of compliance score on audit identity, leverage, size, foreign ownership, and free float was embarked upon to learn whether these factors influence compliance.

3.2 **Population and Sample Design**

The population consists of all companies listed on the Nigerian Stock Exchange as at 2012/2013 fiscal year. Table 3.8 presents these companies by industrial sectors. A separate sample was designed for each research question and the corresponding hypothesis. Overall, two independent samples were designed.

Table 3.8
Companies in Nigerian Stock Exchange Market by Industrial Sectors

N/S	Industrial Sector	Number of companies listed
1.	Agriculture	5
2.	Construction/Real Estate	9
3.	Consumer Goods	33
4.	Banking and Insurance Services	48
5.	Health Care	10
6.	ICT	11
7.	Industrial Goods	23
8.	Natural Resources	5
9.	Oil & Gas	10

Source: The Nigerian Stock Exchange FactBook 2012/2013.

The first sample is an amalgam of manufacturers of consumer, industrial and pharmaceutical products. This pull of manufacturers into a pool is justified on three grounds. First, these companies share similar accounting process so that differences in application of accounting standards cease to operate in the background as a suppressor or distorter variable. Second, the products of these companies are non-cyclical in nature; that is, their demand is non-dependent on the level of economic growth. The purpose of this selection criterion is to eliminate outliers since descriptive statistics provide the basis for inferential tests. Third, the amalgam satisfies sample adequacy requirement for statistical analysis; for example, Hair, Black, Babin, Anderson and Tatham (2006, p.112) recommend a minimum of 50 observations to embark on a factor analysis. Some of the research questions or hypotheses require a cross-sectional distribution of financial

ratios; therefore, to meet sample adequacy requirement, similar firms must be pulled into a pool to constitute a sample for conducting a factor analysis. Based on the pool, the sample size is now 66 companies in the manufacturing industry. However, at the time of fieldwork, one company has been delisted, reducing the number to 65. Of this number, five companies neither submitted their annual report and accounts to the Stock Exchange nor published it on the Internet. Thus, the effective number of companies that participated in the study is 60, representing about 90 per cent of the companies in the consumer, industrial and pharmaceutical products. However, with some research questions or hypotheses, the sample size was further reduced by the number of firms that reported negative operating profit margin ratio. The second sample is an amalgam of banks and insurance companies. This sample was constituted to answer the research questions that address capital maintenance. All 49 firms in the financial service sectors provided data for the analysis. These companies were appropriate because fair value accounting is more pronounced with financial assets and liabilities (Whittington, 2008) and companies into financial services deal more in financial instruments. However, on the research question and hypothesis that address national income statistics, an amalgam of the two samples was formed. Overall, a total of 109 firms, consisting of 60 manufacturing firms and 49 companies into financial services participated in the study (see Appendix A).

3.3 **Selection of Financial Ratios and Measurement**

The unit of analysis in some research questions and hypotheses are financial ratios. Therefore, a conceptual approach was adopted to select key ratios that are appropriate for the study. The selection criterion is the utility of the ratio as reported in the literature review chapter (Chapter 2). In addition, the financial ratios were selected to form three pragmatic groups: Profitability,

liquidity, and solvency (Horrigan, 1965). Table 3.9 presents the key ratios and the measurement procedure adopted.

Table 3.9
Participating Financial Ratios

S/N	*Ratio*	*Measurement*
1.	Profit margin	operating profit ÷ sales
2.	Return on capital (ROCE)	operating profit ÷ (operating assets + working capital)
3.	Capital turnover	sales ÷ (operating assets + working capital)
4.	Current ratio	total current assets ÷ total current liabilities
5.	Cash flow ratio	operating cash flow ÷ total current liabilities
6.	Working capital ratio	working capital ÷ (operating assets + working capital)
7.	Cash flow to debt ratio	operating cash flow ÷ total debts
8.	Gearing ratio	long-term debt ÷ total equity
9.	Indebtedness	total debt ÷ total equity

Source: Based on results of literature review

The first three ratios characterise profitability; the next three characterise liquidity; the last three characterise solvency. In addition to these ratios, some market based ratios were selected for analysis. These are the earnings per share and net assets per share ratios.

3.4 **Data Collection**

The annual report and accounts are the source of data for the conduct of the study. A large number of the annual report and accounts were downloaded from the websites of the participating companies but some were obtained from the Stock Exchange Library at Lagos. Many financial statements were downloaded from African Financials:

[www.africanfinancials.com]

Stock prices and other information about listed companies were obtained from Cash Craft:

[http://www.cashcraft.com/plistorder.php.]

Stock prices were collected at three distinct periods: (1) stock prices of six months after the fiscal year end of each accounting firm, (2) stock prices beginning nine months before the fiscal year

end of each accounting firm, and (3) stock price three months after the fiscal year end of each accounting firm.

The physical mode of data collection is to read the financial statements of each company to spot the raw data needed to conduct the investigation. A raw datasheet was constructed to collect data from each company. A separate raw datasheet was designed to collect data for each regime (*see* Appendix B). This appendicular instrument was used to collect direct accounting figures from the financial statements and notes to the accounts. A separate data instrument was designed to collect data on corporate social disclosure (*see* Appendix C). The data collection instrument at Appendix C was applied to collect data from annual reports and account prepared before and after IFRS adoption by firms. The reports, prepared within the period 2010 to 2011 (pre-IFRS adoption) and 2013 to 2014 (post-IFRS adoption), were read to spot items of corporate social disclosure. A spotted item goes into one of five categories: (1) trade and linkages, (2) employment creation and labour practices, (3) welfare, health and safety, (4) environment, and (5) government and community contribution. The strands of information under each category were carefully selected such that they apply to all manufacturing companies in the sample. Each company gets a score of one per item of social disclosure otherwise zero. Then, a compliance score is calculated for each category per company as the number of items disclosed ÷ no. of items in the category.

Raw data collected were either used to measure the research variables directly or their proxies. If variables are measured directly, the data generated for analyses are primary data but if variables are measured indirectly using their proxies the data generated for analysis are secondary data.

The study used both primary and secondary data to conduct various analyses to answer research questions or clinch hypotheses.

3.5 **Statistical Analysis**

With some research questions and hypotheses, descriptive statistics (mean, standard deviation, the minimum value, the median, the maximum value, the range, and the interquartile range) were calculated to summarise the distribution of data. Then, the efficient Shapiro-Wilk test is conducted to learn whether to conduct parametric or nonparametric test. The Shapiro Wilk test was chosen because it can detect normality in both small and large number of observations. Other tests are the chi-square goodness-of-fit, the Kolmogorov-Smirnov test, and the Geary's test. The chi-square test requires a large number of observations; the Kolmogorov-Smirnov test is too liberal, accepting normality a little more than necessary; the Geary's test is too conservative, rejecting normality a little more than necessary (Burroughs, 1975, p.372). The Wilcoxon *Z-test* for related sample was the main test conducted, which applies when each sample member produces a pair of data for analysis (Gravetter & Wallnau, 2004, p.344). In this study, to answer some research questions and test some hypotheses, each company produces data under Nigerian domestic accounting standards and IFRS so that the Wilcoxon *Z*-test applies.

Both simple and multiple regression analyses were conducted. In both cases, the least squares method was used to estimate the regression coefficients. The independent *t*-test and the *F*-test were conducted to learn whether regression coefficients are significant, and whether the regression equation has explanatory power. Multiple or simple regression analyses are appropriate when the goal of analysis is explanation, prediction or both (Hair, Black, Babin, Anderson & Tatham, 2006, p.204). An estimated regression equation is subjected to a number of

diagnoses. First, partial regression plots were constructed to assess whether the relationship between one explanatory variable and the response variable, holding other explanatory variables constant, is linear. Second, Levene's F-test was conducted to detect whether variances are equal (that is a test to detect whether the assumption of the homoscedasticity holds). Third, a normal probability plot was constructed and the standardised residuals (*student t*) compared with the normal distribution to learn whether the assumption that the distribution of the explanatory variables, response variable, or both follow a normal distribution. Fourth, tolerance was calculated and evaluated at a cut-off threshold of 0.20 to detect the presence of multicollinearity, and if present, variance inflation factor was calculated and square rooted to detect the extent to which multicollinearity inflated the standard error, and hence the effect on *t-test* result of significance of regression coefficients. Fifth, the coefficient of determination was calculated and an *F-test* conducted at the conventional level to evaluate the amount of explanation made by the regression equation.

A logit analysis was embarked upon for some research questions and hypotheses. A logit model of analysis is appropriate when the response variable is dichotomous (Hair, Black, Babin, Anderson & Tatham, 2006, p.302). In this study, a logit model procedure was followed when the response variable is the regulatory regime, which took on the value of Nigerian domestic accounting standards or IFRS. Unlike the multiple regression procedure, the maximum likelihood procedure was followed to estimate the logit coefficients, and multicollinearity effect was evaluated at a threshold of 0.80. The hit ratio and Nagelkerke R^2 were calculated to evaluate the explanatory power of the logistic models. The −2Log Likelihood (−2LL) was not calculated because a step-wise order was not followed to enter the explanatory variables into the analysis.

Factor analysis was also embarked upon for $H0_2$. In very specific terms, factor analysis was used as a confirmatory data orientation technique in the research question that addresses group stability of financial ratios. A confirmatory approach was followed because the factors (that is profitability, liquidity, and solvency) and the financial ratios that characterise each were determined *a priori*. The literature has established that the profitability factor is characterised by the profit margin ratio, return on capital, and capital turnover. Also, the liquidity factor is characterised by the current ratio, cash flow ratio and the working capital ratio whilst the solvency factor is characterised by cash flow to debt ratio, the gearing ratio, and indebtedness (*see* Table 3.9). If this classification is correct, then the financial ratios within a category should group together as a test of stability; furthermore, the total percentage of trace as an index of relationship should be high, and the factor loading should have like signs.

In conducting the factor analysis, both orthogonal and oblique rotation methods were used. The initial preferred method is orthogonal because factors were considered unrelated but when a feasible solution was hard to emerge, an oblique method was resorted to. A financial ratio having a loading of ±60 and communality of 0.50 is considered statistically and practically significant. The matrix of factor solution was subjected to two primary diagnoses. First, partial correlations, measures of sampling adequacy, and the result of Bartlett test of sphericity were inspected to be sure the results are reliable. Second, eigenvalues of factors must be greater than 1 and percentage of total variance for which the factors account should be at least 60, to be sure all factors (that is profitability, liquidity and solvency) have practical significance.

Hair, Black, Babin, Anderson and Tatham (2006, p.112) recommend a minimum of five variables for each factor but each factor in this study (that is profitability, liquidity or solvency) has three variables for analysis. To the pernickety, no calamity befell due to violation of this requirement because all financial ratios are key indicants, implying that practical significance is preferred to statistical; for example, the threshold for factor loading is .60 based on a sample size of 60. Moreover, Hair, Black, Babin, Anderson & Tatham's advice holds for exploratory factor analysis, not confirmatory. The Kaiser-Meyer-Olkin measure of sampling adequacy is adequate in all instances of the factor analysis, and the Bartlett's test of sphericity shows that the existing structure supports factor analysis.

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

4.1 **Development and Test of Hypothesis 1**

The research question addressed by Hypothesis 1 is: 'What are the adoption effects of IFRS accounting policies on the financial statement elements, their ratios and the accounting measurement paradigm?'

Nobes (2001) advances two reasons to explain the impact of IFRS on financial accounts: (1) rules that are covered in IFRS are missing from domestic accounting standards, and (2) domestic rules follow tax regulations whereas IFRS are capital market oriented. The Nigerian Accounting Standards Board (NASB) had always adapted the old IAS to new transactions peculiar to the Nigerian economy and to suit the peculiarities of the economy. To this extent, one does not expect the transition to IFRS to affect the accounting numbers. However, the International Accounting Standing Board (IASB) has made extensive revisions to the old IAS, and this can affect the numbers. So, on the basis that the NASB did not update the domestic standards in line with the latest revisions of IASB, one should expect the transition to impact on the financial statement elements and their ratios. Thus, the objective is to detect whether the transition to IFRS affects the financial statement elements and their ratios. However, in line with the Popperian method of negation, the hypothesis is stated in the nullifiable form:

H_{01}: The transition to IFRS does not affect the financial statement elements, the ratios and the conservatism paradigm.

The analysis was conducted separately for the financial statement elements and for the ratios to satisfy Pepper's multiplicative corroboration requirement (Pepper, 1992), these being equivalent

accounting amounts. Pepper's corroboration aside, Jones and Finley (2011) argue that aggregate financial statement elements do not control for size differences across firms, and are more subjective to the distorting effects of extreme values. On this premiss, it becomes necessary to re-test the adoption effect on financial ratios. As a handsome bonus, the results are extended to evaluate the extent to which IFRS adoption affects the conservatism concept. The raw data for the analysis are presented at Appendices D and E. Appendix D presents the financial statements elements whilst Appendix E presents the financial ratios, which runs from 2008 to 2014. These financial ratios were used in various tests.

The financial statement elements at Appendix D are the financial statement elements at First Time Adoption, and they are the aggregates: total assets, *TA*; total liabilities, *TL*; total equity, *TE*; operating profit, *OP*; and net income, *NI*. In order to compile a cross-sectional distribution of any financial statement element (or ratio), the financial statement element under Nigerian domestic accounting standards (NG-GAAP) is subtracted from the financial statement element under IFRS, and the result divided by the financial statement element under NG-GAAP as a measure of 'effect'; as an example, the adoption effect of IFRS on total asset is [Total Assets under IFRS – Total Assets NG-GAAP] ÷ Total Assets under NG-GAAP. The adoption effect is calculated for each firm in the sample and compiled into a cross-sectional data distribution; then, a *Shapiro-Wilk test* is conducted to determine whether the distribution approximates the normal distribution. The result of the Shapiro-Wilk test is used to select the appropriate statistical summaries and statistical tests. If the Shapiro-Wilk test result shows that the data distribution approximates a normal distribution, the mean and standard deviation are selected and the related sample *t-test* conducted but if non-normally distributed, the median, range and interquartile range

are selected and the *Wilcoxon signed rank test* conducted. The standardised Wilcoxon test result, that is the *z*-statistic, was used both for interpretation and computation of effect size. The descriptive statistics are used to assess the magnitude of the effect of IFRS adoption whilst the sign of change (+ or −) obtained when a financial statement element under Nigerian GAAP is subtracted from the financial statement element under IFRS is used to gauge the direction of impact. The proportion of companies in the sample affected by the adoption of IFRS is also reported to gauge the size effect. Table 4.1 presents the statistical summaries and results of normality test, the results of statistical tests and the effect size. Panels A and B present the descriptive statistics whilst Panel C presents the statistical test results as well as the effect size, which is a measure of practical significance.

Table 4.1
Adoption Effect of IFRS on Assets, Liabilities, Equity, Operating profit & Net income

Magnitude of change	ΔTA	ΔTL	ΔTE	ΔOP	ΔNI
Panel A: Descriptive statistics and Normality test					
mean	0.251	0.084	−0.028	0.548	0.724
standard deviation	0.532	0.210	0.218	1.957	6.240
minimum	−0.573	−0.775	−0.999	−0.870	−17.366
maximum	+2.646	+0.522	0.377	9.999	27.912
range	3.218	1.298	1.375	10.869	45.278
interquartile range	0.365	0.195	0.118	0.186	0.314
Wilk *w*	0.663	0.813	0.754	0.458	0.458
p-value	0.0005	0.0005	0.005	.0005	0.0005
Panel B: Direction of change					
positive (+)	45 (74.2%)	45(74.2%)	24(40.3%)	24(40%)	27(45.2%)
negative (−)	15(25.8)	10(17.1)	36(59.7)	36(60)	31(51.6)
no change	0(0.0)	5(8.6)	0(0.0)	0(0.0)	02(3.2)
Total (*N*)	60(100%)	60(100%)	60(100%)	60(100%)	60(100%)
Panel C: Statistical tests					
z-statistic	4.409	0.551	1.260	0.866	0.315
p-value [2-tailed]	.001	.0005	.351	.502	.817
effect size	.56	.07	.16	.11	.04

Source: computed from the data at Appendix D

4.1A **IFRS Transition Effect on Financial Statement Elements**

4.1A.1 **IFRS transition effect on total assets**

In Table 4.1, the statistical summaries and test results in column ΔTA describe the cross-sectional data distribution of total assets for the entire sample. About 74 *per cent* of the sample recorded an increase in total assets whilst 25.7 *per cent* recorded a decrease; thus, the total assets of all firms are affected by the transition. The distribution is badly skewed ($w = 0.66$, $p < 0.05$), suggesting that the range, the interquartile range and a nonparametric test are the appropriate statistics for the analysis. The range and interquartile range are quite large (3.22, 0.37), suggesting that the transition to IFRS affected the assets of companies by a large and varying amount. The largest effect was observed for a company that recorded an increase of about 265 *per cent*, followed by another at about 105 *per cent*; only one company recorded a decrease of about 57 *per cent*, which is somewhat substantial. The reconciliatory notes of these companies disclosed some large misclassifications of transaction items attributable to classification errors. The standardised result of the *Wilcoxon signed rank test* shows that the adoption effect of IFRS on total assets is both statistically and practically significant, $z = 4.41$, $p < .05$; *effect size* = 0.56.

4.1A.2 **IFRS adoption effect on total liabilities**

Column ΔTL in Table 4.1 presents the statistical summaries and results of tests conducted on the cross-sectional distribution of the transition effect on total liabilities. About 74 *per cent* of the firms in the sample recorded an increase in total liabilities, 17 *per cent* recorded a decrease whilst 9 *per cent* experienced no effect. Overall, over 91 per cent of the firms in the sample have their aggregate liabilities affected by the transition. The distribution is non-normally distributed ($w = 0.813$, $p < .05$); therefore, the range and interquartile range are appropriate to summarise the distribution. The range and interquartile range are small (1.30, 0.12), suggesting that the

transition effect on aggregate liabilities is small and evenly spread across the companies in the sample. An inspection of the *box plot*, which was one of the SPSS output from the analysis, revealed three extreme cases. Only one company recorded a large decrease of 77.5 *per cent* in liabilities, which was due to reclassification of accruals and large amount owed related parties and other creditors. Generally, aggregate liabilities increased moderately but two firms recorded some substantial increase of over 47 *per cent*. The standardised result of the related sample *Wilcoxon signed rank test* shows that the transition effect on aggregate liabilities is statistically significant, $z = 0.55$, $p < 0.05$; nevertheless, the result is non-practically significant, *effect size* = 0.07.

4.1A.3 **IFRS adoption effect on total equity**

Column ΔTE in Table 4.1 describes the cross-sectional data distribution of total equity for the entire sample. 60 *per cent* of the firms recorded a decrease in equity whilst 40 *per cent* recorded an increase suggesting that the transition effect on total equity varies across entities. The distribution is non-normally distributed ($w = 0.75$, $p < .05$), suggesting that the range and interquartile range are appropriate statistical summaries. The range and interquartile range are small (1.38, 0.12) implying that the effect is small for the participating firms except for one company that experienced 'stellar improvement' in equity. A further probe revealed that the firm had been experiencing financial difficulties: The firm's total equity before the mandatory adoption was a woeful negative figure which improves tremendously after the adoption. The adoption of IFRS almost erodes the negative equity; what does this suggest? This might signal transition earning management (*cf.* Field, Lys & Vincent, 2001). Nevertheless, the results of the related sample *Wilcoxon signed rank test* shows that the transition effect on equity is both

statistically and practically nonsignificant, $z = 1.26$, $p > 0.05$, *effect size* = 0.16, suggesting that the change effect on total equity is immaterial to conclude that the transition makes an effect.

4.1A.4 **IFRS adoption effect on operating profit**

Column ΔOP in Table 4.1 presents the statistical summaries and results of tests conducted on the cross-sectional distribution of the transition effect on trading profit. 40.0 *per cent* of the companies in the sample recorded an increase in operating profit whilst 60.0 *per cent* recorded a decrease; thus, the transition to IFRS affected all companies that participated in the study. The distribution is widely non-normal ($w = 0.46$, $p < .05$); therefore, the range and interquartile range are appropriate to summarise the distribution. The range is large and the interquartile range also somewhat large (10.87, 0.19), suggesting that the transition effect on operating profit is large and varies widely across the companies in the sample. The standardised result of the related sample *Wilcoxon signed rank test* shows that the transition effect on operating profit is both statistically and practically nonsignificant, $z = 0.87$, $p > 0.05$, *effect size* = 0.11, suggesting that the change effect on operating profit is immaterial to conclude that the transition makes an effect.

4.1A.5 **IFRS adoption effect on net income**

Column ΔNI in Table 4.1 presents the statistical summaries and results of tests conducted on the cross-sectional distribution of the transition effect on net income. About 45 *per cent* of the companies recorded an increase, 52 *per cent* recorded a decrease whilst 3 *per cent* recorded no effect. Overall, 97 per cent of companies in the sample have their net income affected by the transition. The distribution is badly skewed ($w = 0.46$, $p < .05$); therefore, the range and interquartile range are appropriate to summarise the distribution. The range and interquartile range are large (45.29, 0.31), suggesting that the transition effect on net income is large and

varies widely across the companies in the sample. The standardised result of the related sample *Wilcoxon signed rank test* shows that the transition effect on net income is both statistically and practically nonsignificant, $z = 0.32$, $p > .05$, *effect size* = .04, suggesting that the change effect on net income is immaterial to conclude that the transition makes an effect.

4.1B **IFRS Transition Effect on Financial Ratios**

Table 4.2 presents the statistical summaries and result of tests conducted on the cross-sectional distribution of the transition effect on financial ratios. Panel A presents the statistical summaries and normality test whilst Panel B presents the number of observations that recorded an increase, a decrease or no change. Panel C presents the results of the standardised result of the *Wilcoxon signed rank test* and the effect size.

4.1B.1 **IFRS transition effect on profitability ratios**

Three profitability ratios were involved in the analysis: the operating profit margin, return on capital employed, and capital turnover. The cross-sectional distribution of the operating profit margin ratio, or OPM, is non-normally distributed under both regimes: w =0.78, p <.05[NG GAAP]; w = 0.73, p < .05 [IFRS]. Therefore, the median or the interquartile range is an appropriate statistical summary to compare the two distributions. The interquartile range decreased slightly (0.17 vs. 0.14), indicating equal variability around the median value. The operating profit margin increased for about 57 per cent of the observations, decreased for 40 per cent, and about three per cent remained unaffected. Overall, the median of the operating profit margin increased from 10 per cent to 13 per cent but the increase is statistically and practically non-significant, $z = 1.81$, p >.05, *effect size* = 0.23.

Table 4.2

Adoption Effect of IFRS on profitability, liquidity and Solvency ratios

Panel A: Descriptive Statistics & Normality test

Ratio	OPM		ROCE		CT		CR		CFR		WCR		CF/D		GR		D/E	
GAAP	NG	IFRS	NG	IFRS	NG	IFRS	NG	IFRS	NG	IFRS	NG	IFRS	NG	IFRS	NG	IFRS	NG	IFRS
mean	0.10	0.13	0.26	0.44	2.32	2.00	1.34	1.26	0.28	0.12	0.33	0.33	0.25	0.24	0.41	0.42	1.45	1.60
SD	0.19	0.18	0.35	0.97	1.79	1.56	0.72	0.58	0.37	0.91	0.72	0.94	0.42	0.25	1.05	0.50	1.38	1.30
median	0.10	0.12	0.20	0.22	1.75	1.67	1.16	1.27	0.26	0.17	0.19	0.22	0.26	0.22	0.20	0.28	1.13	1.33
Min.	-0.70	-0.70	-1.03	0.01	-1.11	-1.01	0.10	0.07	-1.06	-0.53	-1.56	-0.80	-2.30	-0.44	-1.14	-1.48	-3.04	0.36
Max.	0.50	0.49	1.03	5.84	7.73	7.54	3.74	1.64	1.51	7.04	4.25	5.56	0.86	0.83	7.81	2.13	8.86	8.02
range	1.20	1.19	2.06	5.84	8.84	8.86	3.64	2.57	2.57	7.57	5.81	6.35	3.16	1.27	8.94	3.62	11.90	7.66
IQR	0.17	0.14	0.28	0.28	2.37	1.51	0.96	0.89	0.31	0.34	0.52	0.50	0.31	0.32	0.47	0.39	1.16	1.19
Wilk *w*	.79	.73	.85	.34	.91	.90	.94	.99	.92	0.36	.73	.51	.71	.99	.44	.80	.72	.75
p-value	.00005	.0005	.0005	0.0005	.009	.003	.004	.64	.001	.0005	.0005	.0005	.0005	.89	.0005	.0005	.0005	.0005

Panel B:Direction of Change

Ratio	OPM	ROCE	CT	CR	CFR	WCR	CF/D	GR	D/E
Positive (+)	34(56.5%)	33(54.8%)	27(45.0%)	24(40.0%)	29(48.4%)	23(38.7%)	26(43.5%)	42(69.4%)	41(67.7%)
negative (−)	24(40.3)	27(45.2)	33(55.0)	34(58.0)	31(51.6)	37 (61.3)	34(56.5)	18 (30.6)	19(32.3)
no change	02(3.2)	0(0.0)	0(0.0)	2(2.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0.(0.0)
Total (*N*)	60(100%)	60(100%)	60(100%)	60(100%)	60(100%)	60(100%)	60(100%)	60(100%)	60(100%)

Panel C: Statistical tests

Ratio	OPM	ROCE	CT	CR	CFR	WCR	CF/D	GR	D/E
z-statistic	1.81	0.94	-1.65	-0.75	-0.86	-1.5	-1.65	2.56	2.26
p-value	.18	.45	.21	.45	.39	.13	.89	.01	.02
effect size	.23	0.12	.21	.13	.11	.19	.21	.33	.30

Source: computed from the cross-sectional ratio distributions at Appendix E

Note:

OPM, operating profit margin; ROCE, return on capital employed; CT, capital turnover; CR, current ratio; CFR, cash flow ratio; WCR, working capital ratio; CF/D, cash flow to debt ratio; GR, gearing ratio; D/E, total debt to equity, SD, standard deviation; IQR, Interquartile range

The cross-sectional distribution of the return on capital employed or ROCE is non-normal under both GAAPs though much more widely non-normal under the IFRS regime: w =0.85, p <.05[NG GAAP]; w = 0.34, p < .05 [IFRS], suggesting that the two distributions should be compared using the median or the interquartile range. The interquartile range remained unchanged, indicating equal variability around the median. ROCE increased for about 55 per cent of the observations and decreased for about 45 per cent, indicating that all companies that participated in the study are affected. The median value of ROCE increased from 20 per cent to 22 per cent but the increase is both statistically and practically non-significant, z = 0.94, p >.05, *effect size* = 0.12.

The cross-sectional distribution of capital turnover is non-normal under both GAAPs though not badly skewed: w =0.91, p <.05[NG GAAP]; w = 0.90, p < .05 [IFRS], suggesting that the two distributions should be compared using the median or the interquartile range. The interquartile range under IFRS is smaller [3.37 vs. 1.51] indicating less variability. Capital turnover increased for 45 per cent of the observations and decreased for about 55 per cent, indicating that all companies in the study are affected. The median value of capital turnover decreased by 8 per cent but the increase is both statistically and practically non-significant, z = 1.65, p >.05, *effect size* = 0.21.

4.1B.2 **IFRS transition effect on Liquidity ratios**

The liquidity ratios are the current assets to current liabilities or current ratio, cash flow to tangible assets or cash flow ratio, and working capital to tangible assets or working capital ratio. The cross-sectional distribution of the current ratio under IFRS regime is normally distributed, w

= .99, $p > .05$ but only slightly non-normal under Nigerian GAAP, $w = .94$, $p < .05$. This suggests that the mean and standard deviation are good statistical summaries, and the related *t*-test is also appropriate; moreover, the t-test can be robust against normality in this circumstance (*see* Moore, 1995). Thus, both the *t*-test and the *Wilcoxon signed rank test* were conducted for reliability of result. The standard deviation and the interquartile range under IFRS are smaller, indicating less variability. The current ratio increased for 40 per cent of the observations and decreased for 58 per cent with only one observation remaining unchanged. The mean of the distribution decreased by 8 per cent though non-significant, z = 0.75, $p > .05$, *effect size* = 0.01; or, $t(61) = 0.92$, $p > .05$.

The cross-sectional distribution of the cash flow ratio is non-normally distributed under both GAAPs: $w = 0.92$, $p < .05$[NG GAAP]; $w = 0.36$, $p < .05$ [IFRS], suggesting that the two distributions should be compared using the median or the interquartile range. The interquartile range under both GAAPs is small, indicating less variability. The cash flow ratio increased for about 48 per cent of the observations and decreased for about 52 per cent, indicating that all companies in the study are affected. The median value decreased by 9 per cent though not statistically and practically significant, $z = 0.86$, $p > .05$, *effect size* = 0.11.

The cross-sectional distribution of the working capital ratio is non-normally distributed under both GAAPs: $w = 0.73$, $p < .05$[NG GAAP]; $w = 0.51$, $p < .05$ [IFRS], suggesting that the two distributions should be compared using the median or the interquartile range. The interquartile range under both GAAPs is small, indicating less variability. The working capital ratio increased for about 39 per cent of the observations and decreased for about 61 per cent, indicating that all

companies in the study are affected. The median value decreased by 3 per cent but non-significant, $z = -1.5$, $p > .05$, *effect size* = 0.19.

4.1B.3 **IFRS transition effect on Indebtedness ratios**

Three ratios were used to gauge indebtedness: (1) total debt to equity, (2) long-term liabilities to equity (i.e. gearing), and (3) the cash flow to total debt which, though not a measure of indebtedness, shows the extent to which available cash meets indebtedness. The distribution of the cash flow to total debt for Nigerian GAAP is badly skewed, $w = .71$, $p < .05$ but normally distributed for the IFRS, $w = .99$, $p > .05$. Therefore, the median and the interquartile range were used as the appropriate descriptive statistics rather than the mean and standard deviation. About 44 per cent observed an increase in this ratio whilst 57 per cent observed a decrease. The median ratio decreased from 26 per cent to 22 per cent but not significant, statistically and practically, $z = -1.65$, $p > .05$, *effect size* = .21.

The cross-sectional distribution of the gearing ratio is widely non-normally distributed for both GAAP, $w = 0.44$, $p < .05$[NG GAAP]; $w = 0.80$, $p < .05$ [IFRS]. Therefore, the median and the interquartile range are appropriate statistics. About 69 per cent of the firms observed an increase in this ratio whilst 31 per cent observed a decrease. The median ratio changed from 20 per cent to 28 per cent, and this shift was significant, $z = 2.56$, $p < .05$, *effect size* = .33. On the ratio of total debt to equity, the cross-sectional distributions for both GAAPs are widely non-normal, $w = 0.72$, $p < .05$[NG GAAP]; $w = 0.75$, $p < .05$ [IFRS]; therefore, the median and interquartile range are appropriate statistics. About 68 per cent of the firms observed an increase whilst 32 per cent observed a decrease, and the median ratio shifted from 1.13 to 1.33, that is, increased by 20 per cent, and this shift was significant, $z = 2.26$, $p < .05$, *effect size* = .30.

4.1C **Adoption Effect of IFRS on Conservatism and Share-based Ratios**

A conservative index (CI) for a financial statement element was calculated by subtracting its IFRS value from the Nigerian GAAP value, dividing the difference by the absolute value of the Nigerian GAAP, and subtracting the quotient from one; for example, a CI for aggregate total assets or TA, is computed as $\mathrm{CI}(\mathrm{TA}) = 1 - \frac{\mathrm{TA}_{\mathrm{NIG}} - \mathrm{TA}_{\mathrm{IFRS}}}{\left|\mathrm{TA}_{\mathrm{NIG}}\right|}$. (*see* Gray, Linthicum & Street, 2009).

Conservatism test was conducted on total assets and liabilities, these being the financial statement elements that are affected by the transition to IFRS. The CI describes economic measurement behaviour of the accounting profession. A *CI* less than 0.95 indicates conservatism (signed −), suggesting that IFRS adoption has no effect on conservatism. On the other hand, a *CI* greater than 1.05 indicates optimism (signed +), suggesting that IFRS adoption affects the conservatism concept; and a *CI* that falls within the range of 0.95−1.05 (signed 'zero') indicates that IFRS adoption does not make the accounting profession conservative or optimistic(i.e. neutral). The standardised *Wilcoxon z- test* was conducted to weigh the significance of the direction of measurement perception. Effect size was calculated to gauge practical significance, using the relation $Z/\sqrt{N}$. Table 4.3 presents the statistical summaries and result of tests conducted on the cross-sectional distributions of the transition effect on conservatism and the share-based ratios.

The distribution of the conservative index (CI) for both assets and liabilities are non-normally distributed (*w* [assets] = .66, p < .0005; *w* [liabilities] = .81, p < .0005), suggesting that the range and interquartile range are the appropriate statistical summaries. On the basis of Gray's measurement (Gray, 1980), the medians of both distributions are in the optimism domain but more pronounced for the total assets. This profile shows that a shift from the conservatism

concept is more pronounced in the measurement of assets than liabilities. The standardised results of the binomial test shows that the shift is both statistically and practically significant, z = 3.40, $p < .05$, *effect size* = .43.

Table 4.3
IFRS Adoption Effect on Conservatism, earnings per share and net assets per share

	conservatism		EPS		NPS	
	Assets	**Liabilities**	**NG**	**IFRS**	**NG**	**IFRS**
Panel A: Descriptive statistics and normality test						
mean	1.25	1.08	3.00	2.95	18.40	20.78
standard deviation	0.53	0.21	6.19	6.72	23.90	25.76
median	1.07	1.06	1.05	0.84	9.40	9.40
minimum	0.43	0.23	-0.71	-1.33	1.79	1.79
maximum	3.65	1.52	30.14	33.97	97.07	98.27
range	3.22	1.30	30.85	35.30	95.28	96.27
interquartile range	0.37	0.20	2.69	2.59	12.17	23.40
Wilk *w*	.66	.81	.52	.53	.67	.68
p-value	.0005	.0005	.0005	.0005	.0005	.0005
Panel B: Direction of change						
conservatism (+)	04(6.5%)	04(6.5%)	20(34.0%)		43(71.0%)	
optimism (−)	31(51.6)	31(51.6)	27(45.0)		9(14.5)	
neutral (0)	25(41.9)	25(41.9)	13(21.0)		8(14.5)	
Total (*N*)	60(100%)	60(100%)	60(100%)		60(100%)	
Panel C: Statistical tests						
z-statistic	3.39	3.39	−2.36		4.80	
p-value [2-tailed]	.009	.009	.076		.0005	
effect size	.43	.43	.30		.61	

Source: computed from the data at Appendices D & E
Note:
Conservatism is measured by Gray index; EPS, earnings per share; NPS, net assets per share.

The share-base ratios are the earnings per share and net assets per share, which are published stock-ratio statistics. Tests were conducted on both ratios to reaffirm the findings that the transition to IFRS makes no impact on both operating and net income but only on total assets. Already, the tests on indebtedness re-verified the findings that the transition to IFRS affects total liabilities whilst the tests on operating profit and net income reconfirm the claim that total equity remained unaffected but further testing is required for both operating profit and net income. There remains for reconfirmation the result on net assets.

The cross-sectional distributions of earnings per share for both GAAPs are badly skewed, w = 0.52, p < .05[NG GAAP]; w = 0.53, p < .05 [IFRS]. 34 per cent of the firms observed an increase in earnings per share; 45 per cent, a decrease; 21 per cent, no change. The median decreased from 105 per cent to 84 per cent but this is nonsignificant, z = −2.36, p > .05, *effect size* = .30. The cross-sectional distributions of net assets per share for both GAAPs is also badly skewed, w =0.67, p < .05[NG GAAP]; w = 0.68, p < .05 [IFRS]. 71 per cent of the firms in the study observed an increase; 14.5 per cent, a decrease; 14.5 per cent, no change. Thus, about 85 per cent of the firm's net assets per share are affected by the transition, though the median position remained unchanged. The standardised results of the *Wilcoxon signed rank test* shows that the effect is significant, z = 4.8, p < .05.

4.2 **Development and Test of Hypothesis 2**

This hypothesis addresses the research question, 'What are the adoption effects of IFRS accounting policies on the distributional forms and stability of the financial ratios? A priori, the financial ratios were categorised into three pragmatic groups: profitability, liquidity, and solvency. On the solvency ratios, the study hypothesises that the IFRS adoption improves their stability and distributional forms because management plan the capital structure of their firms; for example, the ratio of total debts to total assets, working capital to total assets, and long-term debt to total equity, long-term debt to total assets approximate a normal distribution (Deakin, 1976; Frecka & Hopwood, 1983; Buckmasters & Saniga, 1990; Martikainen, Perttunen, Yi-Olli & Gunasekaran, 1995). These ratios have total assets as the denominator component and should be skewed due to historical cost accounting rules (*cf.* Buckmasters & Saniga, 1990) but IFRS mandates fair value accounting which requires both components to be measured at current prices. Thus, the transition to IFRS should improve the stability and distributional forms of the solvency

ratios due to fair value accounting and management planning of the capital structure of firms. On liquidity ratios, the structural hypothesis is that IFRS adoption improves their stability and distributional forms, *ceteris paribus*. Generally, financial institutions exercise controls over the liquidity ratios as part of debt covenants so that in companies that situate in countries where debt is the primary source of finance, these ratio would form a peak at the centre with few companies on either side, suggesting a normal distribution. In equity-financed firms, on the hand, institutional constraints would be lacking so that much variability is expected in the distribution of liquidity ratios. However (an important 'however'), trade creditors use liquidity ratios to make decision on whether to supply raw materials to the firm so that management treats these group of ratios as targets during planning and budgeting; hence, the distributional form of these ratios should not depart severely from the normal distribution; for example, the current and quick ratios often approximate a normal distribution (Martikainen, Perttunen, Yi-Olli & Gunasekaran 1995; Akintola, 1998). Nevertheless, the current ratio might be skewed due to the interaction of a number of external and internal factors affecting its components (Buckmasters & Saniga, 1990). Generally, management treats profitability ratios as guidelines to be reached during the planning and budgeting period; therefore, one does not expect these groups of ratios to depart severely from the normal distribution; for example, Martikainen, Perttunen, Yi-Olli & Gunasekaran (1995) find the return on capital employed to approximate a normal distribution. Moreover, the result of the investigation on the adoption effect of IFRS on the financial statement elements has shown that the transition to IFRS does not affect the profitability ratios. This position leads to the hypothesis that the transition to IFRS does not detract from the normality assumption that underlies the distribution of the profitability ratios. Thus, in sum, the study hypothesises that:

H_{02}: The distributional forms and stability of the financial ratios do not differ under Nigerian domestic accounting standards and the IFRS.

The analysis was conducted separately to detect temporal stability, within group stability and the distributional form of the financial ratios. The raw data for the analysis are presented in Appendix E.

A cross-sectional distribution was compiled for each of the nine ratios defined in Table 3.2 at page 112. The accounting periods are 2008−2011 (Nigerian GAAP); 2011−2014 (IFRS regime). Analyses were conducted separately for each regime. In each regime, the relative size of the standard deviation to the mean and the trend in the standard deviations were observed to learn whether temporal stability exists prior to the transition to IFRS and after the transition. Then, the distributional forms of the ratios were investigated using the ratio of the moment coefficient of skewness to the standard error (designated *K*) and the efficient Shapiro-Wilk normality test. The distribution of a financial ratio may be non-normally distributed but whether it approximates the normal distribution is another kettle of fish; for example, Horrigan (1965) and O'Connor (1973) detect non-normality but conclude that the distributions of the ratios approximate the normal distribution. Thus, the result of the Shapiro-Wilk test is used to learn whether the distribution of a financial ratio is normally distributed whilst the magnitude of K is used to conclude whether a distribution approximates the normal distribution. Specifically, the criterion ratio, $K = \beta / SE$ where β is the moment coefficient of skewness, and SE = $[6(n-1)/(n+1)(n+3)]^{1/2}$, was constructed. K < 3 indicates approximate normality otherwise non-normality.

To learn whether financial ratios are more stable within groups under IFRS, *factor analysis* was embarked upon separately for each regime. The variables are the nine financial ratios whilst the factors to be extracted are profitability, liquidity and solvency. The cross-sectional distributions of all nine financial ratios in 2008, 2009, 2010 and 2011 calculated from the financial statements prepared using Nigerian GAAP were subjected to factor analysis to detect ratios that group together and the factor they explain. This experiment is repeated with the same cross-sectional distributions of all nine financial ratios but calculated from the financial statements restated to IFRS in 2011, and then 2012, 2013 and 2014. The examination of ratios within a category for stability is based on *a priori* knowledge and statistical results. A priori, the ratios within profitability, liquidity and solvency are known; therefore, the ratios within each category should group together as a test of stability. Statistically, the ratios within each group should be highly correlated (Horrigan, 1965) and the total percentage of variance explained should be high or the signs of factor loading should be the same to indicate that the ratios are related. The results of Nigerian GAAP and IFRS were compared to conclude on which regime financial ratios are more stable.

4.2.1 **Adoption effect on temporal stability and distributional forms of financial ratios**

Table 4.4 and Table 4.5 present the results for Nigerian GAAP and IFRS respectively. Temporal [in]stability in the two regimes is examined using the trend in the series of standard deviations. A higher standard deviation indicates a higher instability. Under Nigerian GAAP, the standard deviation of operating profit margin rose by 20 per cent, then decreased by over 60 per cent, and rose again by over 300 per cent. However, after transition (i.e. 2012 upwards) temporal stability was experienced. This may indicate less earnings management during IFRS regime, and in fact,

the trend in standard deviation of return on capital employed series is corroborative. The high standard deviation relative to the mean during Nigerian GAAP regime indicates that the return on capital employed is manipulated as management appears to be working within a constricted range. There was temporal instability in the distribution of the capital turnover ratio under Nigerian GAAP but became stable on adoption of IFRS. Overall, this profile suggests absence of or less earnings management during IFRS regime.

The cross-sectional distribution of the operating profit margin is non-normally distributed in both regimes but approximates the normal distribution in some instances; for example under Nigerian GAAP, the operating profit margin approximates the normal distribution in 2008, 2009 and 2010 ($K < 3$; $p < .05$ for all *Ws*) except in 2011 ($k > 3$; $W = .90$, $p < .05$). Also, it approximates the normal distribution under IFRS in 2012 and 2013. Under Nigerian GAAP, the return on capital employed is normally distributed in 2008 ($K < 3$; $W = .98$, $p > .05$); non-normally distributed in 2009, ($K > 3$; $W = .42$, $p < .05$); non-normally distributed in 2010 and 2011 ($p < .05$ for all *Ws*) but approximates the normal distribution ($K < 3$ in both instances). In contrast to IFRS, the return on capital employed is normally distributed in 2013 ($K < 3$; $W = .97$, $p > .05$); non-normally distributed in 2011, 2012 and 2014 ($p < .05$ for all *Ws*) but approximates the normal distribution in 2012 and 2014 ($K < 3$ in the two instances). These profiles suggest that the adoption of IFRS makes no impact on the distributional form of the operating profit margin ratio and return on capital employed. In both regimes, the cross-sectional distribution of the capital turnover ratio is normally distributed in three instances and approximates the normal distribution in one instance; thus, the distribution of the capital turnover follows a normal distribution.

Table 4.4

Temporal Stability and Distributional Forms of Financial Ratios: Nigerian GAAP (2008−2011)

Panel A: 2008−2009

Ratio	OPM		ROCE		CT		CR		CFR		WCR		CF/D		GR		D/E	
Year	**'08**	**'09**	**'08**	**'09**	**'08**	**'09**	**'08**	**'09**	**'08**	**'09**	**'08**	**'09**	**'08**	**'09**	**'08**	**'09**	**'08**	**'09**
mean	0.14	0.15	0.10	.12	2.50	2.11	1.55	1.9	0.18	0.21	0.33	0.36	0.12	0.18	0.48	0.53	2.21	2.46
SD	0.05	0.06	0.04	.21	0.89	0.95	0.45	0.69	0.08	0.12	0.12	0.10	0.08	0.11	0.21	0.33	0.82	0.78
Msk	0.31	0.37	0.05	6.26	-0.01	0.17	1.22	.33	-0.10	-.62	.55	-0.74	.44	2.82	0.42	0.20	0.62	0.14
SE	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
K	1.03	1.23	0.02	20.9	0.03	0.06	4.07	1.1	0.3	2.1	1.8	2.5	1.47	0.94	1.4	0.67	2.07	0.47
w	.96	.96	.98	.422	.96	.96	0.91	.98	.90	.94	.73	.95	.97	.70	.94	.97	.93	.97
p-value	.03	.03	..60	.0005	.03	.06	.0005	.32	.0005	.005	.0005	.02	.15	.0005	.007	.07	.001	.18
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

*Panel B:*2010−2011

Ratio	OPM		ROCE		CT		CR		CFR		WCR		CF/D		GR		D/E	
Year	**'10**	**'11**	**'10**	**'11**	**'10**	**'11**	**'10**	**'11**	**'10**	**'11**	**'10**	**'11**	**'10**	**'11**	**'10**	**'11**	**'10**	**'11**
mean	0.11	0.11	0.09	.15	2.63	1.85	1.6	1.76	0.12	0.24	0.41	0.44	0.16	0.25	0.45	0.42	1.85	1.82
SD	0.02	0.09	.02	.04	0.99	0.66	0.55	0.58	0.09	0.13	0.12	0.15	0.06	0.10	0.45	0.46	0.59	0.66
Msk	-0.45	-1.21	-0.79	.35	0.314	0.45	1.09	0.98	0.91	0.92	0.52	.88	0.24	-3.43	1.18	2.92	0.62	-0.01
SE	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
K	1.5	4.0	2.6	1.17	1.05	1.5	3.6	3.3	3.0	3.0	1.7	2.9	0.8	11.4	4.0	9.7	2.07	0.03
W	.97	.90	.92	.88	.96	.97	.88	.92	.96	.93	.98	.87	.95	.65	.86	.72	.92	.98
p-value	.14	.0005	.001	.0005	.061	.089	.0005	.001	.029	.001	.242	.0005	.014	.0005	.0005	.0005	.001	.23
N	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Source: computed from the cross-sectional ratio distributions at Appendix E

Note:

(1) *SK* is moment coefficient of skewness; SE is standard error of the moment coefficient of skewness; *W* is Shapiro-Wilk statistic; *K* is the ratio of *SK* to *SE* in absolute value.

(2) OPM is operating profit to sales; ROCE is operating profit to operating assets; CT is sales to operating assets; CR is current assets/current liabilities; CFR is cash flow to current liabilities; WCR is working capital to operating assets; CF/D is cash flow to total debts; GR is long-term debts to equity; D/E is total debts to total equity.

Table 4.5

Temporal Stability and Distributional Forms of Financial ratios: IFRS (2011−2014)

Panel A: 2011−2012

Ratio	OPM		ROCE		CT		CR		CFR		WCR		CF/D		GR		D/E	
Year	**'11**	**'12**	**'11**	**'12**	**'11**	**'12**	**'11**	**'12**	**'11**	**'12**	**'11**	**'12**	**'11**	**'12**	**'11**	**'12**	**'11**	**'12**
mean	0.11	0.13	0.12	0.10	1.74	2.17	1.76	1.87	0.20	0.15	0.42	0.46	0.24	0.20	0.36	0.52	1.88	2.11
SD	0.09	0.03	0.03	0.03	0.64	0.64	0.58	0.57	0.09	0.08	0.12	0.10	0.08	0.10	0.31	0.24	0.66	0.57
SK	-1.21	0.85	1.04	0.57	0.49	0.13	0.95	0.69	0.83	-.36	0.24	0.52	0.06	-0.41	1.83	0.108	-1.16	-0.39
SE	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
K	4.0	2.8	3.5	1.9	1.6	0.43	3.2	2.3	2.8	2.1	0.8	1.73	0.21	1.4	6.1	0.36	.54	1.3
W	.90	.87	.90	.95	.95	.97	.92	.95	.94	.67	.98	.85	.98	.92	.84	.95	.97	.94
p-value	.0005	.0005	.0005	.012	.011	.073	.001	.013	.004	.0005	.60	.0005	.50	.001	.0005	.02	.09	.005

Panel B: 2013−2014

Ratio	OPM		ROCE		CT		CR		CFR		WCR		CF/D		GR		D/E	
Year	**'13**	**'14**	**'13**	**'14**	**'13**	**'14**	**'13**	**'14**	**'13**	**'14**	**'13**	**'14**	**'13**	**'14**	**'13**	**'14**	**'13**	**'14**
mean	0.13	0.11	0.12	0.09	2.29	2.55	1.99	2.03	0.21	0.18	0.44	0.32	0.25	0.21	0.52	0.63	2.16	2.39
SD	0.03	0.02	0.04	0.02	0.64	0.70	0.57	0.49	0.09	0.10	0.10	0.11	0.09	0.10	0.24	0.17	0.57	0.50
SK	0.63	1.62	0.51	.65	0.13	-0.02	0.69	0.06	-.32	-.64	0.54	0.78	-0.41	2.94	0.10	0.08	-0.39	-0.25
SE	0.30	0.3	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
K	2.1	5.4	1.7	2.2	0.4	0.05	2.3	0.2	1.0	2.1	1.8	2.6	1.4	9.8	0.3	0.3	1.3	0.82
W	.96	.88	.97	.90	.97	.98	.95	.98	.68	.41	.85	.76	0.92	.44	.97	.94	.94	0.95
p-value	.03	.0005	.15	.0005	.07	.57	.02	.36	.0005	.0005	.0005	.0005	0.001	.0005	.07	.003	.006	0.01

Source: computed from the cross-sectional ratio distributions at Appendix E

Note:

(1) *SK* is moment coefficient of skewness; SE is standard error of the moment coefficient of skewness; *W* is Shapiro-Wilk statistic; *K* is the ratio of *SK* to *SE* in absolute value.

(2) OPM is operating profit to sales; ROCE is operating profit to operating assets; CT is sales to operating assets; CR is current assets/current liabilities; CFR is cash flow to current liabilities; WCR is working capital to operating assets; CF/D is cash flow to total debts; GR is long-term debts to equity; D/E is total debts to total equity.

Under Nigerian GAAP, the standard deviation of the current ratio series fluctuates within the period; the cross-sectional distribution was non-normal in three instances (2008, 2010 and 2011: $K > 3$; $p < .05$ for all *Ws* statistics) and normally distributed in one instance (2009: K < 3; $w = .98$, P > .05). In contrast to IFRS regime, the current ratio was fairly temporally stable; approximated the normal distribution in three instances ($k < 3$ through 2011 to 2013), and became fully normally distributed in 2014 ($k < 3$; $W = .98$, $p > .05$). Stated succinctly, the current ratio is non-normally distributed under both regimes but approximates the normal distribution after the implementation of IFRS, suggesting that IFRS improves the distributional form of the current ratio. The standard deviation of the cash flow series also fluctuates under Nigerian GAAP (though not badly) but the cross-sectional distribution approximates the normal distribution ($K < 3$ in all instances) though non-normally distributed ($p < .05$ for all *Ws* in all instances). In contrast, the standard deviation of the cash flow series under IFRS fluctuates less and also approximates the normal distribution. The cross-sectional distribution of the working capital ratio also sustains this pattern except that it was normally distributed in 2010 under Nigerian GAAP and in 2011 when the figures were restated using IFRS accounting policies. Thus, IFRS improves the temporal stability of the current ratio, the cash flow ratio, and the working capital ratio; nevertheless, their cross-sectional distributions are non-normal but approximate the normal distribution.

Temporal stability of the cash-to-debt distribution is essentially the same under both regimes but under Nigerian GAAP, the cash-to-debt ratio is normally distributed in 2008 ($K < 4$; $W = .97$, $p > .05$) and non-normally distributed in other years; however, the distribution approximates the normal distribution in two instances (i.e. 2009 and 2010). In contrast to IFRS, the distribution is

normally distributed in 2011 ($K < 3$; $W = .98$, $p > .05$) and non-normal in other years but approximates the normal distribution in 2012 and 2013. The gearing ratio sustained this distributional pattern: Under Nigerian GAAP, the ratio is normally distributed in 2009 ($K < 3$; $W = .97$, $p > .05$) and non-normally distributed in other years. In contrast to IFRS, the distribution of the ratio is normally distributed in 2013 ($K < 3$, $W = .97$, $p > .05$) and non-normal in other years except that it approximates the normal distribution in 2012 and 2014. Temporal stability of the indebtedness ratio under both regimes are fairly comparable; however, under Nigerian GAAP, the distribution of the indebtedness ratio is normally distributed in two instances (2009 and 2011: $K < 3$; $p > .05$ for all *Ws*); non-normally distributed in other years but approximates the normal distribution ($K < 3$ in all instances). In contrast to IFRS, the distribution is non-normally distributed in all instances but approximates the normal distribution (2011 through 2014). These profiles indicate that the cash-to-debt ratio, gearing and indebtedness are non-normally distributed but approximate the normal distribution.

4.2.2 **Adoption effect on financial ratio stability within groups**

Table 4.6 and Table 4.7 presents the factor loadings resulting from the factor analysis of the nine financial ratios calculated from the financial statements prepared under Nigerian GAAP and IFRS, respectively. In Nigerian GAAP regime, the return on capital employed (ROCE) the operating profit margin (OPM) and the capital turnover ratio (CT), all group together in two instances; that is, in 2008 and 2010 accounting year. A priori, these ratios characterised profitability; that is, profitable firms tend to be positively correlated with operating profit margin, return on capital employed and capital turnover.

Table 4.6
Group Stability of Financial Ratios : NIGERIAN GAAP (2008 − 2011)
Panel A: 2008−2009

2008 Accounting Year									2009 Accounting Year								
Var.	**Factor 1**		**Var.**	**Factor 2**		**Var.**	**Factor 3**		**Var.**	**Factor 1**		**Var.**	**Factor 2**		**Var.**	**Factor 3**	
Ratios	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2
ROCE	.955	.922	CFR	.942	.891	D/E	.766	.638	CT	.867	.752	WCR	.936	.876	D/E	.900	.812
OPM	.932	.884	WCR	.931	.868				OPM	.865	.751	CFR	.932	.872	GR	.803	.745
CT	.888	.806															
Eigenvalue	2.80			1.87			1.87			2.24			1.89			1.61	
% variance	30.6			20.6			14.7			23.3			20.7			19.8	

Panel B:**2010−2011**

2010 Accounting Year									2011 Accounting Year								
Var.	**Factor 1**		**Var.**	**Factor 2**		**Var.**	**Factor 3**		**Var.**	**Factor 1**		**Var.**	**Factor 2**		**Var.**	**Factor 3**	
Ratios	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2
OPM	.950	.929	GR	.898	.814	CF/D	.813	.693	OPM	.745	.603	WCR	.889	.838	D/E	.835	.710
ROCE	.939	.908	D/E	.867	.768	CFR	.790	.692	ROCE	.715	.605	CFR	.793	.677	GR	.814	.677
CT	.888	.811							CR	.609	.380						
Eigenvalue	2.91			1.58			1.31			2.42			1.91			1.14	
% variance	30.4			19.1			15.0			22.9			21.3			16.4	

Panel C: Diagnostic statistics

Year of cross-sectional distribution	**2008**	**2009**	**2010**	**2011**
KMO	.597	.506	.657	.563
Bartlett's test	$\chi^2(36, N=60)=265.3$	$\chi^2(36, N=60)=165.6$	$\chi^2(36, N=60)=235.5$	$\chi^2(36, N=60)=127.7$
p-value	.0005	.0005	.0005	.0005

Source: computed from the cross-sectional ratio distributions at Appendix E

Note:

(1) Loadings are significant at a threshold of 0.6; KMO is the Kaiser-Meyer-Olkin Measure of Sampling Adequacy

(2) OPM is operating profit to sales; ROCE is operating profit to operating assets; CT is sales to operating assets; CR is current assets/current liabilities; CFR is cash flow to current liabilities; WCR is working capital to operating assets; CF/D is cash flow to total debts; GR is long-term debts to equity; D/E is total debts to total equity.

Table 4.7
Group Stability of Financial Ratios : IFRS (2011 − 2014)
Panel A: 2011−2012

2011 Accounting Year									2012 Accounting Year								
Var.	**Factor 1**		**Var.**	**Factor 2**		**Var.**	**Factor 3**		**Var.**	**Factor 1**		**Var.**	**Factor 2**		**Var.**	**Factor 3**	
Ratios	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2
CFR	.929	.864	ROCE	.794	.680	D/E	.824	.692	ROCE	.922	.859	WCR	.780	.686	D/E	.920	.855
WCR	.913	.840	CR	.651	.428	GR	.781	.620	OPM	.908	.828	CFR	.726	.668	GR	.892	.807
CF/D	.618	.516	OPM	.642	.471				CT	.743	.573	CF/D	.643	.429			
Eigenvalue	2.47			1.70			1.39			2.73			1.82			1.48	
% variance	24.7			20.7			16.4			28.0			19.8			19.2	

Panel B:**2013−2014**

2013 Accounting Year									2014 Accounting Year								
Var.	**Factor 1**		**Var.**	**Factor 2**		**Var.**	**Factor 3**		**Var.**	**Factor 1**		**Var.**	**Factor 2**		**Var.**	**Factor 3**	
Ratios	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2	*Ratios*	*l*	h^2
OPM	.820	.703	WCR	.817	.687	D/E	.894	.819	OPM	.880	.780	CFR	.763	.684	D/E	.856	.755
ROCE	.772	.684	CFR	.775	.669	GR	.887	.797	ROCE	.842	.713	CF/D	.673	.481	GR	.652	.446
CT	.686	.548	CF/D	.651	.482				CT	.748	.575	WCR	.633	.470			
Eigenvalue	2.43			1.80			1.48			2.37			1.45			1.44	
% variance	23.4			20.2			19.7			25.8			16.5			16.0	

Panel C*: Diagnostic statistics*

Year of cross-sectional distribution	**2011**	**2012**	**2013**	**2014**
KMO	.501	.617	.554	.554
Bartlett's test	$\chi^2(36, N=60)=154.7$	$\chi^2(36, N=60)=187.5$	$\chi^2(36, N=60)=134.3$	$\chi^2(36, N=60)=121.3$
p-value	.0005	.0005	.0005	.0005

Source: computed from the cross-sectional ratio distributions at Appendix E

Note:

(1) Loadings are significant at a threshold of 0.6; KMO is the Kaiser-Meyer-Olkin Measure of Sampling Adequacy; h^2 is the communality

(2) OPM is operating profit to sales; ROCE is operating profit to operating assets; CT is sales to operating assets; CR is current assets/current liabilities; CFR is cash flow to current liabilities; WCR is working capital to operating assets; CF/D is cash flow to total debts; GR is long-term debts to equity; D/E is total debts to total equity.

In 2009, the ROCE left the scene for lack of explanation, and in 2011, capital turnover was usurped by the current ratio though only partially identified with the other profitability group of ratios. In contrast, under IFRS regime, the return on capital employed, the operating profit margin, and the capital turnover, all group together in three instances (2012, 2013 and 2014) except in one instance (2011 accounting year) when the capital turnover was also usurped by the current ratio. A priori, the current ratio belongs to the liquidity group, not profitability group. So, what it is that brings the current ratio together with the profitability group? The year 2011 is the accounting year in which the preparers of the financial statements are mandated to restate the accounts to IFRS accounting policies. The technical transformation may explain the slight instability experienced in the profitability group of ratios under the IFRS regime during 2011. Under Nigerian GAAP, there was some amount of instability in the profitability group of ratios as ROCE and capital turnover sometimes lack sufficient explanations to be included in the group. In both regimes, the ratio of operating profit margin dominates based on the magnitude of factor loadings as only in two instances (one each in the two regimes) is the return on capital employed marginally better. This profile suggests that the operating profit margin ratio is the profitability group surrogate and, coincidentally, in the design of the study, healthy firms were selected to participate in the study based on positive operating profit margin.

In the Nigerian GAAP regime, the cash flow ratio and the working capital ratio, all group together to explain liquidity in three instances except in 2010 when no clear category emerged for the liquidity group. In contrast to IFRS regime, the cash flow ratio, working capital ratio, and the cash-to-debt ratio all group together in all instances; however, whilst the 1st-two ratios belong to the liquidity group of ratios, the last is a solvency ratio, a priori. Nevertheless, the

cash-to-debt ratio can qualify as a liquidity ratio insofar as cash is a component of liquidity. In all three instances of association with liquidity under the Nigerian GAAP, the working capital ratio dominates, suggesting it as the group surrogate but under IFRS regime the cash flow ratio is the group surrogate as the working capital ratio decreased substantially in explanation of liquidity in 2014. This, perhaps, may be due to the emphasis on cash flow by the IFRS accounting policies. The working capital ratio is an aggregate model whilst the cash flow ratio is based on a specific component of working capital.

In Nigerian GAAP regime, the ratio of long term debt to equity (i.e. gearing) and the ratio of total debt to total equity group together in three instances (2009, 2010 and 2011) except in one instance (in the 2008 financial year) when the indebtedness ratio was completely independent of other financial ratios. A priori, these ratios are solvency ratios. The gearing ratio lacked sufficient explanation to be included in the solvency group in 2008. In contrast, these ratios group together under IFRS regime in all instances. In both regimes, the indebtedness ratio is the group surrogate and this supports the practice of reporting it in published accounts.

Under Nigerian GAAP, profitability is most important both to preparers and investors. This remains so under IFRS except in 2011 when the accounts are restatement. Based on the restated figures, liquidity is most important but profitability resurfaces thereafter. In all instances under both regimes, the minimum percentage of total variance explained by profitability was 21 per cent whilst the maximum is 31 per cent. This is followed by liquidity which explains less than 22 per cent of total variance in all instances, and then solvency. The importance of profitability over other factors can spur earnings management to paint a glossy picture of performance.

4.3 Development and Test of Hypothesis 3

This hypothesis addressed the research question, 'What is the adoption effect of IFRS accounting policies on value relevance of accounting information to market participants in Nigeria? The accounting profession in Nigeria has been responsive to new forms of transactions and any other developments in the economy. Nigeria adopts the IFRS because of the need to recognise new forms of transactions and categories in the IFRS framework but whether these new forms of transactions and categories, including increased disclosures, lead to higher value relevance is an empirical question. The investigation of the adoption effects on the financial statements elements has revealed that the IFRS accounting policies impact on the aggregate assets and liabilities, not equity or earnings. Stent, Bradbury & Hooks (2010) assert that the test for market value relevance of equity and earnings is meaningful only when IFRS adoption impacts on the magnitude of the financial statement elements. If this inclination is correct, then the finding that IFRS fails to impact on equity and earnings suggests that IFRS accounting policies would also not impact on value relevance of these accounting amounts. Thus, the study hypothesises that market value of earnings and equity does not differ significantly for NG-GAAP and IFRS, *ceteris paribus*; i.e. the study expects no increase in value relevance of earnings and equity provided the models of value relevance hold.

$H0_3$: There is no significant difference between the value relevance of the accounting amounts under Nigerian domestic accounting standards and the IFRS.

Barth, Landsman, Lang & Williams' models of value relevance are the metrics used to measure value relevance of earnings and equity. Current earnings and book value at a specific time period explain a firm value (Stark & Thomas, 1998). Whilst equity book value represents the resources

that a firm can allocate to generate future earnings, earnings is a proxy for current value of the firm (Berger, Ofek & Swary, 1996). Thus, value relevance models associate economic outcomes with earnings and equity book values (for instance, Barth, Landsman, Lang & Williams, 2012).These models are based on the explanatory power of earnings and changes in equity to explain share prices, stock returns and cash flows. Equation 4.1 is a price model which predicts share prices based on earnings and equity:

$$P_{i,t} = \beta_0 + \beta_1 BVE_{i,t} + \beta_2 NI_{i,t} + \varepsilon_{i,t} \quad \text{.....4.1}$$

P = stock prices; BVE = equity book value per share; NI = net income per share. To be sure, the capital market has fully reflected accounting information in the financial statements, Barth, Landsman, Lang & Williams (2012) collected stock prices of 6 months after the fiscal year end of each accounting firms.

Barth, Landsman, Lang & Williams (2012) use the following return model that includes firms with negative income per share (loss firms):

$$R_{i,t} = \beta_0 + \beta_1 NI_{i,t}/P_{i,t-1} + \beta_2 \Delta NI_{i,t}/P_{i,t-1} + \beta_3 Loss_{i,t} + \beta_4 Loss_{i,t} * NI_{i,t}/P_{i,t-1} + \beta_5 Loss_{i,t} * \Delta NI_{i,t}/P_{i,t-1} + \varepsilon_{i,t} \quad \text{.....4.2}$$

$R_{i,t}$ = Stock return, calculated as: $\frac{P_{i,t} - P_{i,t-1} + Div_{i,t}}{P_{i,t}}$; $P_{i,t-1}$ = stock price beginning nine months before fiscal year end; $P_{i,t}$ = stock price three months after fiscal year end; 'Loss' is an indicator variable which equals one if net income per share deflated by share price (i.e. NI/P) is negative and zero otherwise. This variable was included in the model to allow the coefficients of NI/P and ΔNI/P to differ for loss firms. In this study, only three firms recorded a loss, and were deleted from the analysis. Thus, the return model used is as stated in Equation 4.3.

$$R_{i,t} = \beta_0 + \beta_1 NI_{i,t}/P_{i,t-1} + \beta_2 \Delta NI_{i,t}/P_{i,t-1} + \varepsilon_{i,t} \quad \text{.....4.3}$$

Equation 4.4 is a cash flow model that predicts future cash flows from operation based on net income:

$$CF_{i,t} = \beta_0 + \beta_2 \, NI_{i,t} / TA_{i,t-1} + \varepsilon_{i,t} \quad \ldots\ldots 4.4$$

$CF_{i,t}$ = Operating cash flows scaled by lagged total assets; $NI_{i,t} / TA_{i,t-1}$ = net income scaled by lagged total assets.

Separate models were estimated for NG-GAAP and IFRS, and the coefficients of each predictor and the adjusted $\overline{R}^2$ compared for explanatory power. Then, to estimate the amounts of value relevance for each regime, the mean of each predictor's distribution is plugged into each model to obtain the average value of each predicted variable (i.e. share price, stock return, cash flow). Now, if (in fact) the difference in value relevance is caused by difference in the financial reporting system, then equalising backgrounds should equalise value relevance. The mean of each predictor from IFRS is plugged into the regression model for NG-GAAP to obtain an average prediction, which should equal the average obtained earlier for IFRS. Any difference in amount represents some other factors which account for difference in value relevance. By plugging the means of each predictor's distribution from the IFRS regime into the regression model for the domestic accounting standards, the financial reporting system is made to play by the rules that apply to NG-GAAP, so that any difference is an estimate of value relevance that cannot be attributed to difference between the financial reporting systems.

Next, the validity of the value relevance models is tested using a logistic regression technique. If (in fact), the models hold, then they should detect the regulatory regime to which they were applied to make predictions. Equations 4.5, 4.6 and 4.7 express the various logistic regression equations that are applicable.

$$\text{Logit}_{i,t} = p(IFRS=1) = \beta_0 + \beta_1 \text{BVE}_{i,t} + \beta_2 \text{NI}_{i,t} + \beta_3 \text{P}_{i,t} + \varepsilon_{i,t} \quad \text{.....4.5}$$

$$\text{Logit}_{i,t} = p(IFRS=1) = \beta_0 + \beta_1 \text{NI}_{i,t} \cdot / \text{P}_{i,t-1} + \beta_2 \Delta\text{NI}_{i,t-1} / \text{P}_{i,t} + \beta_3 R_{i,t} + \varepsilon_{i,t} \quad \text{.....4.6}$$

$$\text{Logit}_{i,t} = p(IFRS=1) = \beta_0 + \beta_1 \text{NI}_{i,t} \cdot / \text{TA}_{i,t} + \beta_2 \text{CF}_{i,t} + \varepsilon_{i,t} \quad \text{.....4.7}$$

The hit ratio, Nagelkerke R^2, Hosmer and Lemeshow χ^2 were interpreted as metrics of validity of the value relevance models. In particular, Hosmer and Lemeshow tests whether the difference between the predicted and the observed events is significant. This analysis benefits from multicollinearity check using a collinearity table, tolerance and variance inflation factors.

The data for these analyses are presented in Appendices D and F. Appendix F presents stock price information and some raw data computed from Appendix A which has been used to estimate value relevance model. The compute variable function of the statistical software (SPSS 20) was used to calculate some inputs which are not shown in the Appendices. Table 4.8 presents the results. Panel A presents the results for the price model. The relationship between book value of equity per share and share price is negative. However, this predictor is not statistically significant for NG-GAAP (t= −0.78, p>.05) except for IFRS (t = −3.46, p <.05). Thus, changes in equity lack generalizability during the regime of domestic accounting standards. Only net income per share is a significant predictor in both regimes. Overall, the price model has explanatory power for share prices in both regimes. Value relevance of earning is higher under IFRS regime ($\beta_{\text{NG-GAAP}}$ = 17.1 vs. β_{IFRS} = 43.38). On the average, value relevance under IFRS accounting policies is higher by 42.72 per share out of which the financial reporting system accounts for 98.7 per cent whilst expectations of market participants about the future prospect and earnings not accounted for in the financial statements represent 1.3 per cent.

Table 4.8: Value Relevance Statistics

Panel A: Price Model: $p_{it} = \beta_0 + \beta_1 BVE_{it} + \beta_2 NI_{it} + \varepsilon_{it}$

	NG-GAAP				IFRS accounting policies			
Predictors/statistics	Tolerance	VIF	Mean	SD	Tolerance	VIF	Mean	SD
NI_{it}	0.509	1.964	2.92	5.10	0.573	1.746	2.98	5.92
BVE_{it}	0.509	1.964	9.84	9.94	0.573	1.746	15.39	18.79
Base line prediction	−	−	47.67	86.15	−	−	93.30	233.87
Regression results	β	*t-stat*	*p-value*		β	*t-stat*	*p-value*	
Constant	0.604				1.896			
NI_{it}	17.098	23.97	.0005		43.383	19.25	.0005	
BVE_{it}	−0.284	−0.776	.446		−2.646	−3.464	.0020	
	$\overline{R}^2$ = .98; $F(2,57)$ = 539.21, p < .05				$\overline{R}^2$ = .96; $F(2,57)$ = 257.879,p< .05			

Value relevance	**NG-GAAP**	**IFRS**	**Difference**
Amounts	47.74	90.46	42.72
Equalizing	47.74	47.18	0.56

Panel B: Return Model: $R_{i,t} = \beta_0 + \beta_1 NI_{i,t}/P_{it-1} + \beta_2 \Delta NI_{i,t}/P_{it-1} + \varepsilon_{it}$

	NG-GAAP				IFRS accounting policies			
	Tolerance	VIF	Mean	SD	Tolerance	VIF	Mean	SD
$NI_{i,t}/P_{it-1}$	0.402	2.485	0.06	0.10	0.936	1.069	0.07	0.08
$\Delta NI_{it}/P_{it-1}$	0.402	2.485	0.03	0.17	0.936	1.069	−0.04	0.34
Base line prediction	−	−	0.08	0.21	−	−	2.94	21.75
Regression results	β	*t-stat*	*p-value*		β	*t-stat*	*p-value*	
Constant	0.084				2.949			
$NI_{i,t}/P_{it-1}$	−0.140	−0.19	.85		0.268	0.004	0.996	
$\Delta NI_{it}/P_{it-1}$	0.104	0.24	.82		0.773	0.054	0.957	
	$\overline{R}^2$ = −0.02; $F(2,54)$ = 0.198,p > .05				$\overline{R}^2$ = −0.10; $F(2,54)$ = 0.002,p > .05			

Panel C: $CF_{i,t} = \beta_0 + \beta_2 NI_{i,t}/TA_{i,t-1} + \varepsilon_{i,t}$.

	NG-GAAP				IFRS accounting policies			
			Mean	SD			Mean	SD
$N_{i,t}/TA_{it-1}$			0.137	0.108			0.113	0.117
Base line prediction			0.181	0.201			0.107	0.148
Regression results	β	*t-stat*	*p-value*		β	*t-stat*	*p-value*	
Constant	0.003				0.085			
$N_{i,t}/TA_{it-1}$	1.309	4.63	.0005		0.190	0.15	0.48	
	$\overline{R}^2$ = 0.47 $F(2,57)$ = 21.39,p < .05				$\overline{R}^2$ = −0.02 $F(2,57)$ = 0.509,p > .05			

Source: Appendices D and E

Panel B presents the results of the stock model. In both regimes, the model lacks explanatory power for stock return; therefore, the results are not interpreted. Panel C presents the results for the operating cash flow model. In the IFRS, the model lacks explanatory power but is significant for the NG-GAAP; therefore, the results are also not interpreted. Thus, the only valid model is the price model.

Table 4.9 presents the logistic regression results when the price model is used to predict the regulatory regime.

Table 4.9: Diagnostic statistics & results of logistic analysis

Panel A: Correlation Matrix

Variables	NI_{it}	$BVE_{i,t}$	P_{it}
NI_{it}	1.00		
$BVE_{i,t}$	−.58	1.00	
P_{it}	−.86	0.056	1.00

Panel B: Observed vs. predicted

	Predicted	
Observed	NG-GAAP	IFRS
NG-GAAP	19(79.2)*	5
IFRS	11	13(54.2)*

Panel C: Logistic results $\text{Logit}_{i,t} = p(IFRS=1) = \beta_0 + \beta_1 \text{BVE}_{i,t} + \beta_2 \text{NI}_{i,t} + \beta_3 \text{P}_{i,t} + \varepsilon_{i,t}$.

	B	*Wald stat*	$p-value$
NI_{it}	−0.664	4.06	.04
$BVE_{i,t}$	0.067	2.67	.10
P_{it}	0.018	3.71	.04
Constant	−0.199		

*hit ratio in parentheses; Nagelkerke R^2 = .23; Hosmer & Lemeshow $\chi^2 = 6.99, p = .54$
overall percentage = 66.7%

Source: Appendices D and E

Panel A presents the correlation matrix. Earnings and stock prices are highly correlated and move in the same direction. A sensitivity analysis was embarked upon with the aim of determining which variable to drop but Nagelkerke R^2 has the highest value when both variables entered into the model; therefore, these variables were retained in the analysis. In Panel B, the hit

ratios appear in parentheses. Overall, the logit model correctly classified 66.7 per cent of the analysis sample and 23 per cent of the variation in the prediction of IFRS is accounted for by the logit model. All cells in both regimes have less than five observations; therefore the Hosmer and Lemeshow test results do not apply. Panel C presents the main results of the logistic model. Earnings and price are significant predictors of the regulatory regime but book value of equity is not. However, on the average, this profile shows that the price model is valid for the comparison of value relevance in both regulatory regimes.

4.4 Development and Test of Hypothesis 4

This hypothesis addresses the research question, 'What is the adoption effect of IFRS accounting policies on earnings management in Nigeria?' Financial statements are prepared to serve different groups, suggesting that managers can manipulate information pertinent to a group to mask performance. The fundamental question is whether the International Financial Reporting Standards, or the 'IFRS', can avert such a practice. Two conditions must be operational before this can happen: first, the standards must seal up all available opportunities; second, there must be strong institutional enforcement to ensure compliance with fair value rules. With respect to the first, the omission that needed to be 'sealed off' is the opportunities available to use accruals to smooth earnings for whatever purpose. The IFRS are principles-based, suggesting that preparers interpret, examine the circumstance, and select a choice; thus the opportunity to use accruals to smooth income can never be eliminated inasmuch as several choices are available for different circumstances. Regarding the second, the accounting measurement paradigm (known as 'conservatism') is a loophole to manage earnings towards a pre-determined target. Resources (for instance, trade investments) are carried at historical cost with embedded secret reserves

which managers may call upon at bad economic times to mask performance (IASB Speech, 2015). In clearer terms, managers can sell trade investments at year end to improve earnings, given that they were carried at historical cost. The IFRS accounting policies, to some extent, has shifted the accounting measurement paradigm from conservatism to valuation so that managers are forced to undertake periodic valuation of assets and liabilities. Succinctly stated, the storyline that underpins the concept of earnings management is that earnings manipulation exists because IFRS are principles-based which give room for preparers of financial statements to select the choice that best suits the information need of a target group (government, banks, shareholders, etc). Prior to the adoption of the IFRS, the modus operandi of the Nigerian Accounting Standards Boards, or the 'NASB', is to spot circumstances peculiar to the Nigerian economy, review the applicable International Accounting Standards, and specifies appropriate choices. This restricts the choice gamut and, hence less earnings management. This operational mode of NASB is equivalent to the current working method of the IFRS Foundation insofar they limit accounting choice methods to only those that truly reflect economic position and performance of firms. In line with this inclination, the Council adopts the IFRS without adjustments to suit the culture and peculiarity of the economy but whether the limitations in the accounting choices by the IFRS Foundation are sufficient to catch up with cultural and economic developments of Nigeria remains to be detected. An obvious fact is that limitation of accounting choices does not eliminate flexibility, which is the main feature that props up earnings management. Thus, in the light of the flexibility feature in both standards, hypothesizing a direction is unclear but when culture and economic development are brought into the basket of facts, the inclination is that earnings management should be less under Nigerian domestic accounting standards than IFRS. However, in a Popperian manner, the study hypothesises that:

H_{04}: Earnings management under Nigerian domestic accounting standards and the IFRS do not differ significantly.

The research mandate is to detect whether these firms manipulate their stream of earnings or recognize losses as at when due, not to explain why the firms manipulate earnings. A systematic approach that links the metric of earnings management to a psychological meaning is adopted. The critical mandate is to find out whether firms manipulate their stream of earnings to attain a target or whether they recognise losses as they occur. The working method is to examine the standard deviation of earnings relative to the mean to learn whether these firms manage earnings within a constricted range. If firms manipulate earnings to attain a target, the standard deviation would be high relative to the mean because the preparers of the financial statements, perhaps, were instructed to report within a constricted range, and this would be some *prima facie* evidence of earnings management otherwise the standard deviation of earnings stream would be low relative to the mean. As a further probe, the ratio of standard deviation of earnings stream to the standard deviation of cash flow from operation, or the ratio of variability of earnings to variability in operating cash flows, was observed to learn whether firms actually manipulate earnings to attain a target or recognise losses as they occur, the thesis being that if firms recognise losses, then this ratio should be high otherwise low (Ball & Shivakumar, 2006). Then, to complement these results, the frequency of large losses and small positive profit in the earnings streams were observed. The thesis is that if firms manipulate earnings to attain a target, then small positive profit should dominate, and if firms recognise large losses as they occur, then large losses should dominate in the earnings stream (Barth, Landsman & Lang, 2008). Then, to obtain conclusive evidence, operating factors which drive earnings stream but not attributable to the financial reporting system, are removed, using regression techniques. These factors, which

include industry growth and firm characteristics, were identified from financial management literature. Discounting these factors from the earnings stream is important because the participating firms are some amalgam of manufacturing firms drawn from different industrial sectors. Companies in growth stage, for example, always reinvest earnings rather than pay dividends, so that their earnings stream is very volatile. In this situation, high variability will not be a good evaluative factor of earnings management. Furthermore, the rate at which the earnings of a mature company grow is nearer the rate of growth in the overall economy. A good proxy to remove the effect of growth companies from the earnings stream would be the ratio of value added to total assets but previous studies use the ratio of sales to total assets. The value added is the contribution of a company to the GDP; however, a company sale is as good as the value added. So, like previous studies, the ratio of sales to total assets and changes in sales deflated by total assets were included in the design to disinfect earnings stream of industry growth. Firm characteristics such as size, number of competitors, level of fixed investments, and government regulations, can affect earnings stream. Since firms were pulled from different manufacturing sectors to form a pool for the analysis, the effects of firms' characteristics were removed from the stream of earnings in a number of ways. First, the choice of firms was restricted to those with non-cyclical products (i.e. firms with product sales not correlated with the level of the gross domestic product); second, a number of variables were included in the regression design to remove the effect of firms' characteristics from the earnings stream. On size, previous studies use the natural logarithm of the market value of equity but this appears inappropriate as the sample is an amalgam of leveraged and non-leveraged firms. For a leveraged firm, the value of the firm is the sum of the market value of equity and debts, and for non-leveraged firms, its value is the market value of equity shares. The firms in the sample include both debts and equity shares

so that using the market value of equity as a measure of size is inappropriate; hence, the natural logarithm of total assets was used as the measure of size. The use of debt does not change the stream of earnings (Pandey, 1993, p. 560) but it affects earnings inasmuch as interest is deducted from operating income. The ratio of total debts to equity was included in the design to remove the effect from earnings stream. Levels of investments were included in the design by segregating firms that issue new shares during the period and observing whether new external finance affects earnings and operating cash flow. The firms fail to provide clear information on new debt instrument issued within the period so that the percentage change in total indebtedness was used. The study did not include free float and auditor identity in the regression analysis because they explains why managers are [un]able to manipulate earnings. The analysis was repeated on the residual streams after removing all factors that possibly influence the volatility of earnings cash flows, and accruals. In examining the earnings stream for evidence of earnings management or timely loss recognition, the earnings stream is assumed to contain small profit if net income scaled by total assets lies between 0 and 0.01, or large losses if greater than or equal to −0.21 (see Barth, Landsman & Lang, 2008). In addition, the degree of earnings manipulation to attain a target or timely loss recognition associated with each regime was compared using a logit model whereby small profit and large losses predict the regulatory regime.

The units of analysis are change in net income deflated by total assets (ΔNI), change in cash flow deflated by total assets (ΔCF), cash flow from operations deflated by total assets (CFO), total accruals deflated by total assets (ACC), and discretionary accruals (DACC). These units entered into the analysis in two stages. At stage one, factors that influence earnings, cash flow, and accruals were not considered. Discretionary accruals (DACC) were estimated using the cross

sectional Jones model (Jones, 1991). The residuals from the discretionary accruals were used as estimate of discretionary or abnormal accruals (see, also, Iatridis, 2010; Zeghal, Chtourou & Fourati, 2012).

$$ACC_{i,t} = \beta_0\left[\frac{1}{A_{i,t-1}}\right] + \beta_1 \Delta REV_{i,t} + \beta_2 PPE_{i,t} + \varepsilon_{i,t} \quad \text{.....4.8}$$

Where: $ACC_{i,t}$ is accrual in year t scaled by lagged total assets (i.e. $A_{i,t-1}$);

ΔREV is annual change in revenue scaled by lagged total assets.

$PPE_{i,t}$ is property, plant, and equipment in year t scaled by lagged total assets.

At stage 2, ACC, ΔNI, ΔCF and CFO entered into the analysis net of possible influence from background operational factors. After the removal of operational influences, the resultant variables became: ACC*, CFO*, ΔNI*, and ΔCF*. Again, the cross sectional Jones model was used to estimate DACC* as shown in Equation 4.9

$$DACC^{*}_{i,t} = ACC^{*}_{i,t} - (\beta_0\left[\frac{1}{A_{i,t-1}}\right] + \beta_1 \Delta REV_{i,t} + \beta_2 PPE) \quad \text{.....4.9}$$

where $ACC^{*}_{i,t} = ACC_{i,t} - (\beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 EISUE_{i,t} + \beta_6 DISSUE_{i,t})$

The influence of operational variables on earnings stream was removed using Equation 3:

$$\Delta NI^{*}_{i,t} = \Delta NI_{i,t} - (\beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 CFO_{i,t} + \beta_5 LEV_{i,t} + \beta_6 EISSUE_{i,t} + \beta_7 DISSUE_{i,t}) \quad \text{.....4.10}$$

Whilst the distorting effect from operational factors on cash flow stream was removed using Equation 4.11:

$$\Delta CF^{*}_{i,t} = \Delta CF_{i,t} - (\beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t}) \quad \text{.....4.11}$$

Operating cash flow was disinfected using Equation 4.11:

$$CF^{*}_{i,t} = CF_{i,t} - (\beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t}) \quad ....4.12$$

In Equation 4.9 to 4.12, Size is the natural logarithm of total assets, growth is the percentage change in sales, TURN is the ratio of sales deflated by total assets, LEV is the ratio of total debts to equity, EISSUE is a dummy variable which takes on the value of 1 if the firm issued new shares otherwise 0, and DISSUE is the percentage change in liabilities.

The extent to which the frequency of small positive profit predicts the regulatory regime was estimated using Equation 4.13:

$$\text{logit}_{i,t} : pr(IFRS_{i.t} = 1) = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 LEV_{i,t} + \beta_4 TURN_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SPO_{i,t} + \varepsilon_{i,t} \quad .....4.13$$

IFRS takes on a value of 1 so that the predictor, SPO(i.e. small positive profit), predicts the extent to which firms manipulate earnings towards a small positive profit during the IFRS regime. ‘SPO’ is a binary variable that takes on the value of 1 if net profit scaled by total assets is between 0 and 0.01 (small profit) otherwise zero (big profit). A positive SPO coefficient indicates that earnings stream under IFRS regime contains more small positive profit, indicating that there was more earnings manipulation towards a target during the IFRS regime.

The extent to which the frequency of large losses predicts the regulatory regime was estimated using Equation 4.14:

$$\text{logit}_{i,t} : pr(IFRS_{i.t} = 1) = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 LEV_{i,t} + \beta_4 TURN_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t,} + \beta_7 CFO_{i,t} + \beta_8 LNEG_{i,t} + \varepsilon_{i,t} \quad .....4.14$$

Where ‘'LNEG'’ is a dummy variable indicating a measure of timely loss recognition, and takes on a value of 1 if net profit scaled by total assets is less than −0.20 (small losses) otherwise zero (big losses). A positive LNEG coefficient indicates that earnings stream under IFRS regime

contains more small losses, indicating that there was less timely loss recognition during the IFRS regime.

The study also calculated the Pearson correlation between total accruals and operating cash flows, or discretionary accruals and operating cash flows, to learn whether the role of accruals to reduce variability in cash flow from operation was observed properly in both regimes (Dechow, 1994) but not as evidence of earnings management as the magnitude of signed correlation fails to truly reflect the intention to manipulate (Barth, Landsman, & Lang, 2008). Moreover, the sample size was too small to embark on such dubious comparison—dubious because the standard error of the Pearson correlation depends on itself and the sample size, which should be sufficiently large.

A cross-sectional distribution design was followed on the premise that these firms belong to one industry, suggesting that they are similar in essential characteristics; for example, the tendency to manipulate earnings or not to manipulate earnings. The management of a few firms may exhibit extremities but on the average the underlying characteristic of earnings management (i.e. the tendency to manipulate or not to manipulate) dominates. In other words, the cross-sectional distributions of financial ratios within an industry approximate a normal distribution. Moreover, elsewhere, it has been shown that the normal distribution provides a theoretical orientation for the study and pragmatic use of financial ratios of firms within an industry; that is, it may not be a perfect fit, or even badly skewed, for a sample but for the entire population, the distributions of financial ratios approximate the normal distribution. Specifically, cross-sectional distributions were compiled for net income, cash flow from operation, and total accruals, all deflated by total

assets, for the period of 2010, 2011 (NG-GAAP), 2013 and 2014 (IFRS). The transition year (i.e. 2012 fiscal year) was omitted to keep the effect of transitional earnings management constant.

The data for the analysis required to detect whether earnings management was less under IFRS are presented in Appendices D, F, and G. The data at Appendix G are the distribution of the variables in the various regression and logistic models. Tables 4.10 and 4.11 present the diagnostic statistics in panels. These statistics relate to the various disinfectants of earnings, cash flows and accruals. The purpose is to learn whether the various factors which were proposed to influence earnings stream, cash flows and accruals, as documented in financial management literature, distort or suppress the results, if not taken into account. The profile at Panel A shows that the changes in earnings stream is caused by changes in sales and the positive operating cash flow in the current year, and this position remained so in both regimes. Nevertheless, assets, indebtedness, capital turnover, and external finance from shares or debt instruments do not significantly caused variations in earnings stream during each regime even though they affected earnings differently. At Panel B, changes in operating cash flows is also caused by changes in sales and external finance from new issue of shares in both regimes but the effect of other factors varies with the regime. Overall, these factors do not caused significant variations to changes in cash flows. At Panel C, the changes in sales positively affected the operating cash flows of the current year of the NG-GAAP but this was negative for the IFRS regime. Overall, the message from the diagnostic statistics is that an amalgam of firms into the production of non-cyclical products is legitimate for the analysis of earnings management without controls. However, both strategies were triangulated for reliability of results.

Table 4.10
Diagnostic statistics on earnings and cash flows

Panel A : $\Delta NI_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 CFO_{i,t} + \beta_5 LEV_{i,t} + \beta_6 EISSUE_{i,t} + \beta_7 DISSUE_{i,t} + \varepsilon_{i,t}$

	NG-GAAP			IFRS Accounting policies		
	β	*t-stat*	*p-value*	β	*t-stat*	*p-value*
CONSTANT	3.220			0.871		
SIZE	−0.176	−0.31	.76	−0.091	−0.55	.59
GROWTH	0.739	0.17	.87	0.898	0.88	.39
TURN	−0.772	−1.09	.29	−0.070	−0.24	.82
CFO	0.694	0.28	.79	0.391	0.45	.66
LEV	−0.252	−0.44	.66	−0.065	−0.52	.61
EISSUE	−0.525	−0.33	.75	−0.634	−1.46	.16
DISSUE	−1.533	−1.00	.33	−0.680	−2.05	.06
R^2 =.12 ; *F*(7,52) = 0.33, *p* =.93				R^2 =.387 ; F(7,52) = 1.53, *p* = .22		

Panel B: $\Delta CFO_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t} + \varepsilon_{i,t}$

	NG-GAAP			IFRS Accounting policies		
	β	*t-stat*	*p-value*	β	*t-stat*	*p-value*
CONSTANT	−0.817			0.637		
SIZE	0.327	0.59	.57	−0.066	−0.12	.91
GROWTH	−4.823	−1.20	.25	−0.438	−0.69	.50
TURN	−0.672	−0.98	.34	1.140	1.21	.24
LEV	0.462	0.86	.40	−0.356	−0.89	.38
EISSUE	−1.318	−0.82	.42	−0.768	−0.52	.61
DISSUE	−0.261	−0.17	.86	0.990	0.86	.40
R^2 =.151; F(6,53) = 0.92, *p* = .77				R^2 =.235 ; F(6,53) = 0.92, *p* = .50		

Panel C: $CFO_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t} + \varepsilon_{i,t}$

	NG-GAAP			IFRS Accounting policies		
	β	*t-stat*	*p-value*	β	*t-stat*	*p-value*
CONSTANT	0.436			−0.504		
SIZE	−0.028	−0.55	.59	0.070	1.65	.12
GROWTH	0.544	+1.47	.16	−0.007	−0.025	.98
TURN	−0.059	−0.94	.16	0.136	1.83	.08
LEV	−0.069	−1.41	.18	−0.057	−1.81	.09
EISSUE	−0.008	−0.05	.96	−0.102	−0.87	.09
DISSUE	0.110	+0.81	.43	0.000	−0.87	.40
R^2 =.213; F(6,53) = 0.81, *p* = .81				R^2 =.323; F(6,53) = 1.43, *p* = .26		

Source: Appendices D, F & G

Table 4.11

Diagnostic statistics on accruals, logistic results, and earnings management statistics

Panel A : $ACC_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t} + \varepsilon_{i,t}$

	NG-GAAP			IFRS Accounting policies		
	β	*t-stat*	*p-value*	β	*t-stat*	*p-value*
CONSTANT	−0.482			0.273		
SIZE	0.045	1.32	.20	−0.041	−0.78	.45
GROWTH	−0.306	−1.24	.23	0.358	1.06	.31
TURN	0.086	2.06	.05	0.001	0.015	.99
LEV	0.029	0.89	.39	0.034	0.88	.39
EISSUE	0.034	0.35	.73	0.056	0.39	.70
DISSUE	0.005	.060	.95	−0.035	−0.31	.76
$R^2 = .279$; $F(6,53) = 1.16$, $p = .37$				$R^2 = .161$; $F(6,53) = 0.58$, $p = .75$		

Panel B: $pr(1,0) = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SPO_{i,t} + \varepsilon_{i,t}$

$pr(1,0) = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 TURN_{i,t} + \beta_4 LEV_{i,t} + \beta_5 EISSUE_{i,t} + \beta_6 DISSUE_{i,t} + \beta_7 CFO_{i,t} + \beta_8 LNEG_{i,t} + \varepsilon_{i,t}$

	Logistic results on target analysis			Logistic results on timely loss		
	β	*Wald-stat*	*p-value*	β	*Wald-stat*	*p-value*
SIZE	48.549	.000	.996	−0.443	0.233	.629
GROWTH	−655.106	.000	.996	−9.215	2.730	.098
TURN	24.849	.000	.999	−2.503	2.899	.089
LEV	96.917	.000	.996	0.250	0.170	.680
EISSUE	−21.424	.000	.999	0.908	0.266	.606
DISSUE	−31.108	.000	.999	0.694	0.294	.588
CFO	−216.146	.000	.999	−1.444	0.173	.678
SPO/LNEG	83.078	.000	.999	0.009	0.000	.994
CONSTANT	10.023			5.782		
Nagelkerke $R^2 = 1.00$; overall percentage 100%				Nagelkerke $R^2 = 0.462$; overall percentage = 77.4%		

Panel C: Earnings management statistics [Without controls]

	NG-GAAP	IFRS
Mean (ΔNI)	0.355	−0.122
SD(ΔNI)	1.903	0.587
SD (ΔNI)/SD(ΔCFO)	0.962	0.313
Freq (SPO)	1.4(0.35)	1.6(0.40)
Freq(LNEG)	8.82(0.63)	4.2(0.60)
Corr(ACC,CFO)	−0.849	−0.786
Corr(DACC, CFO)	−0.831	−0.772
Total (*N*)	(60)	(60)

Panel D: Earnings management statistics [With controls]

Variability (ΔNI)	3.188	0.211
Variability (ΔNI)/Variability(ΔCFO)	0.958	0.078
Change in SPO	NA	$+\beta_8$
Change in LNEG	NA	$+\beta_8$
Corr(ACC^*,CFO^*)	−0.878	−0.846
Corr($DACC^*$, CFO^*)	−0.855	−0.824

Source: Appendices D, F & G

The main results on earnings management are presented at Panel C and Panel D of Table 4.11. At Panel C, 21 firms reported positive ΔNI for the NG-GAAP and 24 firms for the IFRS out of the 60 firms, and four reported small profit within the range of 0−0.01 in each regime. 38 firms reported negative ΔNI out of which 14 reported small losses less than −0.20 for the NG-GAAP. In contrast to IFRS, 36 firms reported negative ΔNI out of which seven reported small losses. Thus, there appears to be evidence of less earnings management during the NG-GAAP regime. At Panel D, after the removal of possible factors that can supervene to distort or suppress earnings, more small profit and small losses were observed during the IFRS regime, suggesting that firms tend to manage earnings towards small profit or recognise large losses less timely during the IFRS regime.

Using the mean and standard deviation of earnings stream as metrics of earnings management, the storyline in Panel C of Table 4.11 is that firms engage in earnings management in both regimes as the standard deviations relative to the means are high, suggesting that preparers were reporting within a constricted range. However, the higher ratio of standard deviation of earnings to standard deviation of operating cash flows for NG-GAAP shows that firms recognize large losses more timely and this position is confirmed by the higher variability of earnings stream and the ratio of variability of earnings stream to the variability of operating cash flows when concomitant influence were removed from earnings stream. In both regimes, firms properly use accruals to smooth the variability in cash flows as the correlation coefficients between accruals and operating cash flows, or discretionary accruals and operating cash flows, remain negative irrespective of the regime. Although the correlation is less for the IFRS regimes, this does not amount to less earnings management but that accruals were properly used to smooth the

variability in operating cash flows (*see*: Dechow, 1994; Barth, Landsman & Lang, 2008). If, however, less negative correlation indicates less earnings management, then this goes to explain that firms manage earnings towards a target during both regimes but the preparers are unable to cover this up during the IFRS regime.

4.5 **Development and Test of Hypothesis 5**

This hypothesis addressed the research question, 'What is the adoption effect of the IFRS accounting policies on the capital maintenance concept in the accounting profession? The study hypothesises that:

H_{05}: IFRS accounting policies do not impair the capital maintenance concept in the accounting profession.

This hypothesis is a subsumption of three operational objectives. The first objective is to ascertain whether changes in dividend correlate with changes in unrealised profits or losses. If changes in dividend paid are associated with changes in unrealised profit, then there is evidence that unrealised profits influence the size of dividend paid. The second objective is to determine whether management claim of capital maintenance is supported by its managerial strategy. If managerial strategy corroborates management claim of capital maintenance, then the statement of changes in equity provides sufficient information on the maintenance of subscribed capital and this would tend to sustain the inactiveness of the IASB. The third objective is to learn whether the introduction of fair value accounting has closed the gap between the double entry method and the surplus approach method of profit determination. If the difference in profit is insignificant, then there is objectivity in fair values assigned to assets and liabilities.

To determine whether fair value accounting has closed the gap between the double entry system and surplus method of income determination, the net income before tax under the double entry system and the corresponding net income under the surplus approach were obtained for each company in the sample for the period 2011 (Nigerian domestic accounting standards or 'NG-GAAP'), 2012 and 2013 fiscal years (IFRS accounting policies). Net income under the surplus method is calculated as net assets at close of the fiscal year less net assets at beginning and any value of shares issued during the year. A separate cross-sectional distribution was compiled for (1) double entry net income, and (2) surplus method net income. Then, summary statistics were calculated for each cross-sectional distribution. The *Z*-test was conducted at an alpha level of 5 per cent to weigh the significant difference between the median net incomes under both approaches.

To learn whether fair value gains and losses influence dividend distributions, unrealised gains and losses, and dividends paid were handpicked from the financial statements for the period 2013 and 2014 and changes in unrealised gains or loss, and changes in dividends were calculated, and correlated following Pearson product moment procedure. Finally, to learn whether management claim of capital maintenance is supported by managerial strategy, changes in equity was correlated with changes in working capital, following the Pearson product moment procedure. A high correlation indicates changes in equity and working capital are explanatory factors of capital maintenance and this would be evidence that management claim of capital maintenance is supported by managerial strategy otherwise reported increase in capital lacks strategic sustenance, trust, growth or financial stability. Market perceptions of stewardship and share prices are economic amounts, and if this is correct, then a high correlation is expected and

this would validate Abdel-Khalik measure of stewardship as economic amounts of accountability; thus, share prices and stewardship quality index (SQI) were correlated. Further, the cross-sectional distribution of changes in equity and SQI were correlated to detect value relevance of capital maintenance; changes in working capital and SQI were also correlated to learn whether managerial strategy has value relevance to market participants. On the premiss that SQI and share prices are economic values, a regression of SQI and share prices on changes in equity and working capital were embarked upon. Equation 4.15 is a regression of SQI on changes in equity and working capital:

$$\mathrm{SQI}_{\mathrm{it}} = \beta_0 + \beta_1 \Delta\mathrm{EQUITY}_{\mathrm{it}} + \beta_2 \Delta\mathrm{WCAPITAL}_{\mathrm{it}} + \varepsilon_{it} \quad \text{.....4.15}$$

Where SQI = [(market value of shares/book value of shares) −1]. A positive SQI is an indicator of stewardship quality (Abdel-Khalik, 2011).

Equation 4.16 is a regression of changes in stock prices on changes in equity and working capital:

$$\Delta\mathrm{P}_{\mathrm{it}} = \beta_0 + \beta_1 \Delta\mathrm{EQUITY}_{\mathrm{it}} + \beta_2 \Delta\mathrm{WCAPITAL}_{\mathrm{it}} + \varepsilon_{it} \quad \text{.....14.16}$$

Where $\Delta\mathrm{P}_{\mathrm{it}} = \frac{\mathrm{P}_1 - \mathrm{P}_0}{\mathrm{P}_0}$; P_0 is stock price, 6 months before the fiscal year end; P_1 is stock price, 3 months after the fiscal year end. The purpose is to ensure accounting information is in the public domain (Barth, Landsman, Lang & Williams, 2012).

The data for the confirmation of this structural hypothesis are presented at Appendix H. These data were used to compile the distribution required to conduct the analysis. Table 4.12 presents the results.

Table 4.12: Analysis of capital maintenance Results

Panel A: Descriptive statistics

	NG-GAAP [2011]		IFRS Accounting Policies [2012 & 2013]			
	Double-entry	Surplus	Double-entry	Surplus	Double-entry	Surplus
Mean	7,284,407	−1,214,490.83	10,985,686.70	7,358,610	17,434,841.33	10,521,984.67
SD	17,874,900.17	31,836,860.39	29,670,616.05	19,753,376.38	43,320,502.42	33,886,410.08
Min.	−29,342,364	−136,844,060	−2,975,472	−3,367,910	73,464	−14,335,243
median	903,868	385,388	3,066,650	807,296	3,884,345.50	615,108.00
Max.	68,491,298	59,966,618	153,440,190	101,396,903	210,657,565	155,621,043
Range	97,833,662	196,810,678	156,415,662	104,764,813	210,584,101	169,956,286
IQR.	9,710,034	4,881,541	6,351,774	6,732,458	11,070,475	6,802,241
Wilk *W*	.776	.581	.414	.447	.413	.458
p-value	.0005	.0005	.0005	.0005	.0005	.0005

Panel B: Direction of difference [double-entry – surplus]

Positive (+)	5(9%)	11(20%)	10(19%)
Negative (−)	49(91)	43(80)	44(81)
Ties (0)	0(0%)	0(0%)	0(0%)
Total (*N*)	54(100%)	54(100%)	54(100%)

Panel C: Statistical test

z-stat	−4.412	−2.649	−2.6
p-value [2-tailed]	.0005	.008	.009

Panel D: Pearson Correlation analysis

	ΔFGAIN	ΔDIV	ΔEQUITY	ΔWCAPITAL	ΔSQI	ΔP
ΔFGAIN	1	−.059	−.35	.128	−.081	−.063
		(.783)	(.094)	(.551)	(.707)	(.770)
ΔDIV		1	.058	.321	−.175	−.353
			(.789)	(.126)	(.414)	(.091)
ΔEQUITY			1	.382	−.057	−.051
				(.066)	(.792)	(.812)
ΔWCAPITAL				1	−.015	−.003
					(.943)	(.989)
ΔSQI					1	.501
						(.013)*
ΔP						1

Panel D: $\text{SQI}_{it} = \beta_0 + \beta_1 \Delta\text{EQUITY}_{it} + \beta_2 \Delta\text{WCAPITAL}_{it} + \varepsilon_{it}$.

	β	*t*-stat	*p*-value
Constant	5.494		
ΔEQUITY	−1.126	−0.25	.80
ΔWCAPITAL	0.027	0.03	.98

$R^2 = .003,\ F(2,51) = .035,\ p > .05$

Panel C: $\Delta\text{P}_{it} = \beta_0 + \beta_1 \Delta\text{EQUITY}_{it} + \beta_2 \Delta\text{WCAPITAL}_{it} + \varepsilon_{it}$.

	β	*t*-stat	*p*-value
Constant	−0.131		
ΔEQUITY	0.096	0.63	.54
ΔWCAPITAL	.030	1.04	.31

$R^2 = .099,\ F(2,51) = .1.16,\ p > .05$

Source: Appendix H

*correlation is significant at $\alpha = .05$ (2-tailed); *p*-value in parentheses

Panel A through C present the results on the test of whether fair value accounting has closed the gap between the double entry method and the surplus approach. The diagnosis statistics at Panel A show that the cross-sectional distributions are non-normally distributed; therefore, the median and the interquartile range are the appropriate summary statistics. The interquartile range and median under the double entry method are about twice under the surplus approach. The median difference is significant, $Z = -4.41$, $p < .05$, suggesting a wide gap between the net income under the two methods. After adoption, the disparity between the medians widen even deeper; for example, in 2012 (the transition year), the net income under the double entry method was over three times that under the surplus approach, and in 2013, the gap increases to over 6 times. However, the interquartile range appears tighter under the IFRS accounting policies though not much. In both replications after IFRS adoption, the difference in means is significant at an alpha level of 5 per cent, suggesting that IFRS adoption still fails to close the gap between the double account method and the surplus approach.

Panel C presents the results of the Pearson correlation analysis embarked upon. The results show that changes in dividends and changes in fair value gains/losses are not significantly correlated (Corr = −.06, $p > .05$), suggesting that fair value gain or loss does not influence the value of dividend distribution to equity shareholders. Also, changes in equity and changes in working capital are not significantly correlated at the conventional level (Corr = .38, $p > .05$), implying that management claim of capital maintenance fails to align with reported financial management strategy. Changes in equity, changes in working capital, all are non-correlated with changes in stock prices and SQI, suggesting that market participants do not place a premium on reported capital maintenance or financial management strategy. However, market perceptions of stewardship and stock prices are statistically correlated at the conventional level (Corr = .5, *p*

<.05), implying that both stewardship quality and stock prices are economic amounts. The regression results confirm the correlation analysis. Changes in equity and changes in working capital are not associated with stewardship and stock prices as economic amounts. Thus, capital maintenance and financial management strategy lack market value relevance.

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4.6 **Development and Test of Hypothesis 6**

The research question addressed by this hypothesis is 'What is the adoption effect of the IFRS accounting policies on the national income statistics of Nigeria?' The evidence in the literature reveals that IFRS is a key driver of economic growth; for example, Gordon, Loeb & Zhu (2012) find that IFRS adoption influences the flow of foreign direct investments (FDI); Zaidi & Huerta (2014) detect a positive association between economic growth and IFRS. If these results are correct, then it is reasonable to point out that the adoption of IFRS accounting policies does not alter the national income statistics of a nation. Thus, the study hypothesises that:

H_{06}: The value added of each firm to the gross domestic product does not differ significantly under the Nigerian domestic accounting standards and the IFRS.

The data for the test of this hypothesis are presented at Appendix I. The data are the value added of each firm under Nigerian domestic accounting standards and the IFRS. Two cross sectional distributions of value added were compiled and summarized using descriptive statistics; then, the Wilcoxon *z-test* were conducted to learn whether the difference in value added is significant. This inferential test was selected because the result of the efficient Shapiro-Wilk test revealed that the distributions were badly skewed. Table 4.13 presents the results. The value added of 54

per cent of the firms in the sample increase, 39 per cent decrease, and 7 per cent recorded a tie. The distribution of value added in each regime is badly skewed ($p < .05$), suggesting that the median and interquartile range are appropriate to describe the distributions. The value eroded from the national product is larger under IFRS but the value added is also larger; however, on the average, value added for the domestic accounting standards is higher, though the difference is statistically nonsignificant, $z = 0.30$, $p > .05$.

Table 4.13: Value Added Statistics

Panel A: Descriptive statistics & normality test	Pre-IFRS	Post-IFRS
mean	13,163,872.49	12,796,353.08
standard deviation	27,891,264.48	28,259,518.33
minimum	−419,226	−5,138,524
median	1,982,669	1,877,822
maximum	142,740,171	142,841,064
range	143,159,397	147,979,588
interquartile range (IQR)	11,551,376	8,161,087
Wilk *W*	.526	.516
p-value	.0005	.0005
Panel B: Direction of impact		
Increase (+)	64(54%)	
Decrease (−)	46(39)	
No effect (0)	8(07)	
Total (*N*)	118(100%)	
Panel C: Statistical test		
z-statistic	0.297	
p-value [2-tailed]	.766	

Source: computed from the data at Appendix I

4.7 **Development and Test of Hypothesis 7**

This hypothesis addressed the question, 'what is the adoption effect of the IFRS accounting policies on compliance with the corporate social disclosures requirements of CAMA and the United Nations?' The Federal Executive Council approves of a corporate social responsibility policy, and the Ministry of National Planning Commission adopts the minimum environmental

and social disclosure requirements of the United Nations ('Nigeria First', 2008). Thus, like the IFRS adoption, Nigeria also adopts the corporate disclosure of the United Nations and, hence, the study expects compliance by reporting entities. However, neither the then NASB or the recently constituted Financial Reporting Council assumes the responsibility of enforcement; therefore, auditors are under no obligation to enforce compliance. The possibility of non-compliance increases with the voluntary declaration of the IASB on corporate social disclosure because in the present era, the accounting profession is bound by pronouncements of the IASB so that a voluntary requirement may impact practice. Nevertheless, Marston & Shrives (1991) observe that if companies anticipate net benefits of publishing information that exceeds the minimum requirements then they occasionally make voluntary disclosure. Moreover, companies that desire international recognition might comply with the corporate social disclosure because voluntary disclosure is driven by the desire for increased international exposure (Young & Guenther, 2003). Furthermore, the United Nations emphasizes that corporate social disclosure increases public recognition of an entity commitment, improves its reputation, enhances employees' motivation, and reduces the risk of conflict with third parties (UNCTAD, 2005). Thus, the study hypothesizes that:

H_{07}: The voluntary declaration of the IASB on corporate social disclosure does not affect compliance with the requirements of the CAMA and the United Nations.

Annual financial statements prepared within the period 2010 to 2011 (pre-IFRS adoption) and 2013 to 2014 (post-IFRS adoption), were read to spot items of corporate social disclosure. A spotted item goes into one of five categories: (1) trade and linkages, (2) employment creation and labour practices, (3) welfare, health and safety, (4) environment, and (5) government and

community contribution. Each firm in the sample gets a score of one per item disclosed otherwise zero. Then, a compliance score is calculated for each category per company as the number of items disclosed ÷ no. of items in the category. The data for analysis are the cross-sectional distributions of compliance score per firm, which consists of the sum of compliance score for all categories. The data are presented in Appendix J. These data are the compliance score of each firm under Nigerian domestic accounting standards and the IFRS. Thus, each company in the sample produces two compliance scores, one being for the period before IFRS adoption and the other after the IFRS adoption. Summary data were calculated separately for each period, and differences obtained and tested for significance using the Wilcoxon *Z-test* at 5 per cent alpha level. When the results show that firms disclosed more corporate social information in the post-IFRS, an improvement index, DI, was calculated for categories in which there were clear improvements following Mısırlıoğlu, Tucker & Yükseltürk (2013):

- social items reported in both periods are marked and counted, a
- social items reported only in the post-IFRS are marked and counted, b
- social items reported only in the pre-IFRS are marked and counted, c
- All social items applicable to all firms but not reported are counted and marked, d

Then, the improvement index (DI) was obtained as $\frac{d}{a+b+c+d}$.

The literature identifies several factors that can affect compliance. First, auditors are the monitors of compliance. Hodgdon, Tondkar, Adhikari & Haress (2009) find that audit firm size is positively related to IFRS compliance. Also, Mısırlıoğlu, Tucker & Yükseltürk (2013) find that audit identity influences disclosure compliance. Generally, the big audit firms have more informative, experienced, and analytical staff to monitor compliance with accounting standards, but they might not enforce social and environmental disclosure as the IFRS has declared them

optional. Large firms disclose more information than small firms because large firms engage in more activities. The IASB has developed separate accounting standards for small firms because firm size is an important determinant of disclosure and accounting policy choice (Rahman, Pererra & Ganesh, 2002). Also, a company that is highly equity financed will disclose more information than that which is highly debt financed because banks and other creditors receive information on their debts directly from management, and they may even sit on the board of companies. Thus, more disclosures are required when a company is equity oriented than when a company is creditor oriented (*cf.* Ball, 1995). Put simply, leverage or gearing can affect disclosure compliance. Foreign shareholders in a board can influence compliance because they have greater exposure to international market (Mısırlıoğlu, Tucker & Yükseltürk, 2013). Also, ownership structure, surrogated by free float, FF, can influence the volume of corporate social disclosure. Therefore, a regression of compliance score on each of these factors was embarked upon. Equation 4.17 is the regression model:

$$\text{CScore}_{it} = \beta_0 + \beta_1 audit_{it} + \beta_2 leverage_{it} + \beta_3 size_{it} + \beta_4 ForeignOwnership_{it} + FF_{it} + \varepsilon_{it} \quad \text{.....4.17}$$

CSore_{it} is the compliance score for firm i at time t.

$$audit = \begin{cases} \text{a dummy variable that } takes \text{ on the value of 1 when } the \text{ firm is audited by one of the Big 4, i.e.} \\ \text{Deloitte, Ernst \& Young, KPMG and PwC otherwise 0} \end{cases}$$

Leverage= total debt to total equity

Size is the natural logarithm of the firm market value.

$$ForeignOwnership = \begin{cases} \text{a dummy variable that } takes \text{ on the value of 1 when } a \text{ foreigner sits on the board,} \\ \text{otherwise 0} \end{cases}$$

The industry type can affect disclosure compliance due to differing nature of activities; for instance, Reverte (2009) finds that environmental sensitivity of the industry of operation

influences corporate social disclosure practices. Also, Rahman, Pererra & Ganesh (2002) note that the nature of activities within an industry could be a reason for the diversity in both the amount and type of disclosure and measurement practices among firms. Therefore, to keep the effect of industry constant, the analysis was restricted to only manufacturing firms. Table 4.14 presents the results.

Table 4.14: Corporate social disclosure statistics

Panel A: Descriptive statistics & normality test	Pre-IFRS	Post-IFRS
mean	1.824	2.355
standard deviation	0.745	1.362
minimum	0.72	0.72
median	1.69	2.11
maximum	3.57	8.01
range	2.85	7.29
interquartile range (IQR)	1.37	1.64
Wilk *W*	.94	.79
p-value	.081	.0005
Panel B: Improvement/detraction statistics		
Improvement (+)		50(81%)
Detraction (−)		2(06)
No effect (0)		10(13)
Total (*N*)		62(100%)
Panel C: Statistical test		
z-statistic		4.408
p-value [2-tailed]		.0005
Panel D: Corporate social disclosure improvement index		
Disclosure category		*DI*
Employment creation and labour practices		0.29(55 observations)
Welfare, health and safety		0.33(35 observations)
Environment		0.43(35 observations)
Government and community contribution		No effect
Trade and linkages		No effect

Panel E: $\text{CScore}_{it} = \beta_0 + \beta_1 audit_{it} + \beta_2 leverage_{it} + \beta_3 size_{it} + \beta_4 ForeignOwnership_{it} + FF_{it} + \varepsilon_{it}$

	β	*t*-stat	*p-value*	Tolerance	VIF
constant	−4.118				
audit	0.742	1.305	.20	−	−
leverage	−0.052	−0.025	.98	.931	1.075
size	.820	3.182	.004	.691	1.445
ForeignOwnership	−0.373	−0.632	.533	−	−
FF	1.443	.835	.411	.713	1.403

$R^2 = .70; F(5,56) = 4.717,\ p = .004$

Source: computed from the data at Appendix J

The descriptive statistics are presented in Panel A. Pre-IFRS adoption, the distribution of compliance scores follows a normal distribution ($W = .94$, $p > .05$), suggesting that the mean and standard deviation are appropriate statistical summaries of the data. However, post-IFRS, the distribution is non-normally distributed ($W = 80$, $p < .05$) though not badly skewed. In terms of the mean and standard deviation, the average compliance score in the post-IFRS period is higher but the pre-IFRS period is characterized by uniformities in corporate disclosure practices. This profile is sustained by the median and interquartile range. Corporate social disclosure items increase by 81 per cent, decrease by 6 per cent, and no effect on 10 per cent of the total social disclosed items (see Panel B). Overall, corporate social disclosure practices improve during the post-IFRS adoption period ($z = 4.4$, $p < .05$). However, the improvement is observed only with certain reporting categories: (1) employment creation and labour practices, (2) welfare, health and safety, and (3) environment, and this result is influenced by size of the firms in the sample, not dependent on audit identity, foreigner sitting on the board, or capital/ ownership structure.

4.8 **Discussion of Findings**

4.8.1 **IFRS adoption effect on financial statement elements and ratios**

The transition effect led to an increase in total assets suggesting that many items now meet asset recognition criteria under IFRS, not Nigerian GAAP. This appears to be the general trend in the findings of studies that address the direct impact of IFRS on the accounting figures (Hung & Subramanyam, 2007; Silva, Do Couto & Cordeiro, 2009; Stent, Bradbury & Hooks, 2010; Gaston, Garcia, Jarne & Gadea, 2010; Mısırlıoğlu, Tucker & Yükseltürk, 2013). Only Godwin, Ahmed and Heaney (2008) and Grossman, Smith and Tervo (2013) detected no effect. This state of affair raises a question on the conservatism concept. The results reveal that IFRS accounting

policies morph to a significant shift from the conservatism concept to realistic valuation. IFRS incorporated many ifs and buts in measurement disclosures which expanded the leeway with which preparers of the financial statements thrash around, the rule being that preparers remain consistently severe or consistently lenient. The shift also affected the measurement of liabilities, for example, management disclosed contingencies but, often, provisions are not made. A typical disclosure on contingencies reads:

> **Pending litigation and claims**
> The Company is engaged in lawsuits that have arisen in the normal course of business. The contingent liabilities in respect of pending litigation and other possible claims amounted to ₦813 million as at 31 December 2012 (2011: ₦55 million). In the opinion of the directors, and based on independent legal advice, the Company is not expected to suffer any material loss arising from these claim. Thus no provision has been made in these financial statements.

This practice is not in consonance with the conservatism concept; hence it represents a major shift to optimism.

Aggregate liabilities increase but moderately; although the inferential test result is statistically significant, the *effect size* is nonsignificant, suggesting a possibility of no effect. In fact, Mısırlıoğlu, Tucker & Yükseltürk (2013) find no effect but the general trend in most research is an increase in liabilities (Hung & Subramanyam, 2007; Godwin, Ahmed & Heaney, 2008; Lantto & Sahlström, 2009; Silva, Do Couto & Cordeiro, 2009; Stent, Bradbury & Hooks, 2010; Gaston, Garcia, Jarne & Gadea, 2010). The results of tests on indebtedness using the financial ratios are corroborative.

There was no effect on total equity. This finding is at variant with that established in the literature. Although previous studies find an increase effect of IFRS adoption on total equity(Jermakowicz & Gornik-Tomaszeaski, 2006; Hung & Subramanyam, 2007; Haller,

Ernstberger & Froschhammer, 2009; Godwin, Ahmed & Heaney, 2008; Stent, Bradbury & Hooks, 2010; Mısırlıoğlu, Tucker & Yükseltürk, 2013; Istrate, 2014), Silva, Do Couto & Cordeiro (2000) find a decrease. The most noticeable effect is due to movement/reclassification in reserves but on the average, they decrease total equity but the general finding in the literature is an increase; thus, the result of this study differs from others except Silva, Do Couto & Cordeiro; nevertheless, statistical test results dismisses the trend so that the study settles on 'no effect' as a conclusion.

The range and interquartile range of net income is much larger than those for operating profit for one of two reasons: either the companies with negative profits have other sources of income that now swamp the losses or the positive profits offset the losses with the interquartile range carrying excessive weights. Overall, the transition to IFRS makes no impact on operating profit and net income and this corroborates the 'no effect on equity'. Also strengthening this result is the profitability ratio analysis. The transition to IFRS makes no significant impact on profitability ratios, including the earnings per share. In essence, profitability is unaffected; hence, equity should be unaffected as well. This pattern of corroboration spreads across the findings in the literature; put otherwise, when net income increases equity also increases, and when net income decreases equity decreases; or when net income is unaffected, equity is also unaffected, this being the way the operating profit, net income, earnings per share and equity behave (*see* Jermakowicz & Gornik-Tomaszeaski, 2006; Hung & Subramanyam, 2007; Godwin, Ahmed & Heaney, 2008; Haller, Ernstberger & Froschhammer, 2009; Lantto & Sahlström, 2009; Stent, Bradbury & Hooks, 2010) but Silver, Do Couto and Cordeiro (2009) and Mısırlıoğlu, Tucker and Yükseltürk (2013) discover polar results: equity decreased but income increased and vice versa,

dismantling the established relationship. This is a rather subtle point, though not expanded upon here, is worth thinking through.

4.8.2 **IFRS adoption effect on distributional forms and stability of financial ratios**

The adoption of IFRS improves both temporal and group stability of ratios in the profitability group. This is due to the codification of fair value rules by the International Accounting Standards Board (IASB) which brings uniformity into fair value practice. When revenue and profit are measured at current prices but assets at historical prices or at abused fair values, instability would characterise the distribution of profitability ratios. Nevertheless, the distributions of profitability ratios are non-normally distributed but approximate the normal distribution. The IFRS improves both temporal and group stability of the cash flow and the working capital ratios but only temporal stability in the case of the current ratio. Their distributional forms are non-normal under both regimes; however, they better approximate the normal distribution under the IFRS regime. It appears the distributions of liquidity ratios tend to follow the normal distribution; for example, Frecka & Hopwood (1983) detect approximate normality in the distribution of the working capital ratio; Martikainen, Perttunen, Yli-Olli & Gunaekaran (1995) detect normality in the distribution of the current and quick asset ratios; Akintola (1998) also detect normality in the distribution of the current asset ratio. Given this approximation to the normal distribution before and after the adoption of IFRDS, one expects group stability (Martikainen, Perttunen, Yli-Olli & Gunaekaran, 1995) but this is not quite so for the current ratio—a source of worry. The current ratio is a popular liquidity ratio and, in fact, the first metric of distress prediction (Horrigan, 1968) but it fails to group together with its fellows; why? Factor analysis, as a working method, did not take us far enough to clear the way for a

psychological solution. Well, as Burroughs noted, 'there is no reason to suppose that mathematical elegance is related to psychological meaning' (Burroughs, 1975, p.283). The current ratio is a deviant (possibly) due to the complex interactions between and among a number of external and internal factors in its components (Buckmasters & Saniga, 1990). The distributions of the solvency ratios are stable overtime and within groups. Although their distributional forms are non-normal, they approximate the normal distribution. This finding holds irrespective of the regime. Deakin (1976) and Buckmasters & Saniga (1990) also find that the distribution of the gearing and indebtedness ratios approximate the normal distribution but Frecka & Hopwood (1983) detect skewness in the distribution of the cash-to-debt ratio. Perhaps, the suspension of the industry effect and the adoption of the IFRS accounting policies improve the distribution of the cash-to-debt ratio to now approximate the normal distribution. On the use of financial ratios as inputs into predictive models, the operating profit margin, cash flow ratio and the indebtedness ratio are the most appropriate surrogates to maximise the utility of such models. However, before the adoption of IFRS, the working capital ratio (i.e. the ratio of working capital to total assets) is the representative ratio for the liquidity group but the cash flow ratio now usurps this ratio, this being due to the emphasis placed on the cash model by the IASB.

4.8.3 IFRS adoption effect on value relevance

The study had hypothesized that market values of earnings and equity do not differ based on the results of the IFRS adoption effect on the aggregate assets and liabilities, not earnings or equity. However, the results are contrary to expectation. A possible explanation is that market participants placed higher premium on the increased disclosure of IFRS accounting policies, which now provides information about the future prospects of the firm. In other words, IFRS

adoption does not affect equity or earnings but the increased disclosure in the IFRS accounting policies explains the higher value relevance observed in the IFRS regime. The study illustrates Ohlson's argument that the price model should be specified to include other information not recognised in the financial statements (Ohlson, 1995). There is publicly available information about the future prospects and earnings of the entity which is not captured by the financial statements and this must be considered in setting the market value of the firm otherwise false conclusion may be drawn on account of differences in explanatory power or regression coefficients of the variables in the value relevance models (Ohlson, 2001). As the initial results of this study show, the explanatory power of the price model for the NG-GAAP was slightly higher and if this were to be the basis of the conclusion, the discovery would have been made in the peripheral shadows.

4.8.4 IFRS adoption effect on earnings management

The study detects evidence of earnings management in both regimes but more pronounced during the regime of the IFRS accounting policies. This findings agree with Capkun, Collins & Jeanjean (2012), Ahmed, Neel & Wang (2013), Houqe, Zijl, Dunstan, & Karim (2012), and Christensen, Lee, Walker & Zeng (2015); nevertheless, whilst these studies compare domestic standards that are independently developed of the old IAS with mandatory and/or voluntary adopters, this study compares domestic accounting standards that are adaptation of the old IAS with mandatory adopters.

However (and this is crucial), the result from this study does not suggest that the IFRS accounting policies are of lower quality rather target management embedded in smooth earnings is a desired accounting attribute inasmuch as the IFRS limit management discretion to report

earnings that are less reflective of the firm's economic performance. Moreover, earnings management is a desired tool to reduce the tax burden (legally) and avoid premature recapitalisation or takeover. The study conceives no relationship between accounting quality and earnings management for earnings management is not a crime rather a legitimate accounting function in society, for accountants are not kings but they eat with kings; they are available to manage earnings to lessen the tax burden of the bourgeoisies or 'improve performance' to avoid premature recapitalisation, takeover, or whatever, to keep the economy going. To Barth, Landsman & Lang (2008); Chen, Tang, Jiang & Lin, (2010); Ahmed, Neel & Wang (2013) and many others, accounting standards that reduce managerial discretion over accounting choices or inherently disallows smoothing or overstatement of earnings are of higher quality. These metrics are appropriate to gauge and monitor accounting outputs of any accounting process, not outcomes. The 'accounting quality concept' is related to perception of society on accounting outputs. The graduates of an educational institution (as an example) are the outputs but the ease with which the graduates secure employment and the perception of the standards of graduates are measures of quality of outputs. Manipulating accounting amounts, which are outputs of the accounting process, using some mathematical elegance, cannot produce outcomes that equal accounting quality. The argument, summed up in syllogistic calibration, is that, 'If earnings management for domestic accounting standards is lower than IFRS, then IFRS accounting policies are of lower quality; earnings management for the domestic accounting standards is lower; therefore, IFRS accounting policies are of lower quality'. This conclusion fails to sustain the premiss on grounds that the 'quality concept' is related to the perception of society on accounting outputs, not based on mathematical manipulation of accounting amounts only, unless the manipulation captures the perception of society; for example, market participants. In blunter

terms, the premiss is unsound; though logical, it fails to take us far enough into the concept of accounting quality.

4.8.5 **IFRS adoption effect on capital maintenance**

The results do not support the alleged fear that fair value gain influences dividend distribution but fair value is highly subjective despite the codification of the rules guiding application. A random inspection of the financial statements shows that a large number of banks and insurance companies estimate fair values using financial models; this perhaps, explains the large discrepancy between net income under the double-entry and surplus methods. In countries with active liquid markets, the results might differ. The fact that management claim of capital maintenance is not associated with financial management strategy rings a bell that the IASB needs to do more in the area of capital maintenance. In addition to the statement of changes in equity (as an example), management might provide summary data on fund stability. A possible scheme is to report the ratio of internally generated funds to total funds. If this is done overtime, users of financial statements could evaluate stability of funds to the company. Ceteris paribus, an investor would prefer a company with a higher ratio of internally generated funds to one with a lower ratio. This is because internally generated fund is more regular and dependable than external source, and more under the control of management. The statement of cash flow does not tell the whole story about financial stability; for instance, it fails to depict the interaction among the various elements of working capital. The point gained by one component is lost to the other component, for example, if non-liquid funds increase, liquid funds would decrease and vice versa, and this has financial implication. When net liquid funds increase, total fund ‘soften’ for management to invest, for example, carry more stock if large holding gains are expected.

Therefore, management might need to complement the statement of changes in equity with a statement of changes in circulatory capital for users of financial statements to assess improvement and deterioration in working capital of a company.

4.8.6 **IFRS adoption effect on national income statistics**

IFRS adoption decreases the national income statistics of a country though the decrease is nonsignificant. If the difference were significant, the economic ranking of Nigeria, vis-à-vis other nations, based on gross domestic product, would have been affected due to IFRS adoption. Although the difference in value added is nonsignificant, differences are likely to be significant in countries where domestic accounting standards differ vastly from the IFRS. Nigerian Generally Accepted Accounting Practices are adaptation of the old International Accounting Standards; hence, the difference in value added is nonsignificant.

4.8.7 **IFRS adoption effect on corporate social disclosure**

There was no effect on trade and linkages, the reason being that Nigerian company law (the Companies and Allied Matter Act [CAMA]) and its domestic accounting standards (SAS 2) require entities to report the statement of value added, which capture most of the social items in this category. On government and community contribution, the reason for the no effect is likely to be due to the tax exempt status accorded to items in this category by the Federal and States Governments. Simply, donations or contributions to community development are deductible from taxable income. Although there was no requirement to report on activities connected with pollution in annual financial statements, some companies reported policies on environmental treatments both before and after the IFRS adoption though there was more disclosure during the

latter period; moreover, some companies provide performance data on pollution controls. A predominant feature observed in corporate social disclosure is that a large proportion of the companies provide only descriptive information with the costs of such actions and arrangements not disclosed in any of the functional categories in the income statements. One doubts, bitterly, whether these policies on social concerns were actually implemented. Companies ought to report qualitative, financial and non-financial data relating to actions and arrangements for social concerns as required by the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting of the United Nations. The IASB cannot be indifferent to the opinions or questions of the public interest as persons and groups affected by environmental decisions of the firm have a legitimate interest in those decisions. All that the IFRS Foundation need is to insert, in the IFRS accounting policies, a statement of compliance with the social disclosures of the Intergovernmental Working Group of Experts rather than declaring them outside the scope of financial statements. This declaration connotes that social disclosures are optional so that auditors are under no obligation to enforce compliance as companies prepare IFRS financial statements to satisfy current and potential owners of the firm, but even at that investors should be allowed to choose less polluting investments or be able to determine, over time, the relation between an enterprise's environmental impact and its financial position and performance.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This research study is designed to detect the impact of the adoption of the International Financial Reporting Standards (IFRS) on the accounting quality and financial statements. On the financial statements, the agenda are the aggregate financial statement elements, the financial ratios, temporal and group stability of the financial ratios, and the accounting measurement paradigm (conservatism). On accounting quality, the agenda are the market value relevance of the accounting amounts, the opportunity to manage earnings, maintenance of the capital maintenance doctrine, and the effect on the national income statistics of Nigeria. As a handsome bonus, the study extends the IFRS adoption effect on corporate social disclosures in annual financial statements. Data were gathered from annual financial statements which span 2009−2014. The results of the data analysis lead to the following findings:

1. The transition to the International Financial Reporting Standards (IFRS) increases aggregate assets and liabilities, not equity or earnings; indebtedness ratios, not profitability or short-term solvency; and shifts the accounting measurement paradigm from conservative to realistic valuation model.

2. The IFRS improves both temporal and group stability of financial ratios in the profitability and long-term solvency categories. However, in the short-term solvency category of financial ratios, the IFRS improves both temporal and group stability of the cash flow and the working capital ratios but only temporal stability in the case of the current ratio. On the use of financial ratios as inputs into predictive models, the operating profit margin, cash flow ratio and the indebtedness ratio are the most appropriate surrogates to maximise the utility of such models. In addition, the

adoption of the IFRS accounting policies has transformed financial ratios distributions into approximately normal distribution.

3. Market value relevance of earnings and equity book value is higher under the IFRS. On the average, value relevance under the IFRS accounting policies is higher by 42 per cent out of which the financial reporting system accounts for 98.7 per cent whilst expectation of market participants about the future prospect and earnings accounts for the remainder.

4. There is evidence of earnings management under Nigerian domestic accounting standards and the IFRS but more pronounced during the IFRS regime.

5. Fair value accounting practice is widely subjective but unrealised profits or losses do not influence dividend distribution; however, management claim of capital maintenance is not associated with financial management strategy. Moreover, market participants do not place a premium on reported capital maintenance or financial management strategy. Thus, capital maintenance and financial management strategy lack market value relevance. In addition, stewardship quality and stock prices are economic amounts.

6. IFRS accounting policies decrease the value of the gross domestic product though not statistically significant.

7. Corporate social disclosure on employment creation and labour practices; welfare, health, and safety; and environmental disclosures improve during the IFRS regime. However, the improvement is associated with size of the firm, not audit identity, ownership or capital structure.

5.2 Implications of findings

1. The IFRS accounting policies increase assets and indebtedness ratio and shifts the accounting measurement paradigm from conservative to realistic valuation model. Nigeria had adapted the old International Accounting Standards (or 'the old IAS'); thus, the implication of this finding is that for companies that situate in countries that adapt the old accounting policies, their indebtedness and assets increased.

2. The IFRS accounting policies improves the distributional forms and stability of the financial ratios. The implication is that the IFRS accounting policies support both the traditional and positive uses of financial ratios, and this is useful for the efficient functioning of the capital market. This finding suggests that industry norm financial ratios can be established which investors can use to evaluate the economic position and performance of companies listed on the Nigerian Capital Market.

3. On the average, market value relevance of earnings and equity book value are higher under the IFRS by ₦42.72 per share out of which the financial reporting system accounts for about 99 per cent, suggesting that market participants place a higher premium on financial statements prepared using the IFRS accounting policies. The implication is that the market participants in Nigeria place less emphasis on future prospects of the firm, suggesting that the financial reporting system is the single explanatory factor that explains value relevance in Nigeria.

4. Earnings management is higher under the IFRS accounting policies than under the Nigeria domestic accounting standards. The reason for this is that the then Nigerian Accounting

Standards Board (NASB) adapted the old International Accounting Standards (or, simply, 'the old IAS'). Thus, the implication of this finding is that the Financial Reporting Council of Nigeria (or simply, 'the Council') should adapt the IFRS so that the opportunity to manipulate earnings will also be reduced.

5. Unrealised fair value profits or losses do not influence dividend distributions. The implication is that IFRS accounting policies are not destructive to the capital maintenance doctrine as is widely reported in the literature. However, the finding that reported increase in capital fails to align with financial management strategy implies that IFRS accounting policies do not entirely guarantee trust, growth and financial stability.

6. The IFRS accounting policies decrease the national income statistics of Nigeria, though not significant. This might have grave consequence on the domineering position of Nigeria as the economy with the highest economic growth in Africa.

7. Corporate social disclosure increased during the IFRS regime despite the declaration by the IASB that issues of social concerns are outside the financial statements. This finding provides evidence to clinch anecdotal claims that even in the absence of laws some agents would still operate to meet the information needs of their principals.

These findings and their implications are useful for the IASB that seeks to understand how the IFRS accounting policies impact on different regions of the world (IASB, 2004, Para. 93). The IASB and the Council (as an example) can use these findings to justify their dogged pursuance of

the accounting change. Moreover, there has been accusation of insufficient attention of the IASB to the concept of capital maintenance. The IFRS accounting policies emphasise that assets and liabilities be reported at fair value (market value) in financial reports. The justification for the change in measurement is that conservatism offers ample opportunity for managers to create secret reserves which are used to mask performance during poor economic times (IASB Speech, 2015). This justification appears not to be catching on as there is hue and cry from lenders and other creditors about managers paying dividends from fair value profit. The results show that fair value profits are not associated with dividend distribution, and hence this finding is very useful for the IASB to continue to pursue fair value accounting.

Furthermore, the findings that financial ratios better approximates the normal distributions under the IFRS accounting policies offer a licence to the IASB to mandate the Financial Reporting Council of Nigeria to develop industry norm ratios to improve the efficiency of the Nigerian capital market. Such a call is logical because it requires an industry norm ratio for a capital market to fully reflect ‘bad and good news’ about a company performance in share prices. Moreover, the finding that the ratios are temporally stable justifies the practice of building models to predict financial distress. A major requirement of inputs into a prediction model is that the inputs should be stable overtime and within the universe of population. The study also establishes the operating profit margin ratio, the cash flow ratio and the indebtedness ratio, as the objective surrogate of the profitability, liquidity and solvency groups of ratios. This finding is useful for practitioners in the field of finance. A model that is developed to predict or forecast corporate failure, for example, would require a representative ratio from each pragmatic group of ratios (profitability, liquidity, and solvency). Since there are multiples ratios within a group, the

analysts face the challenge of selecting a representative ratio from each group as inputs into the model. This finding has helped analysts with the choice of ratios that should serve as inputs into models of corporate distress predictions.

5.3 Conclusion

This study addresses seven broad brush objectives. The first objective is the impact of the IFRS adoption on the financial statement elements, the financial ratios, and the conservatism measurement paradigm of accounting. To achieve this objective, cross-sectional distributions of aggregate financial statement elements and ratios were compiled from the financial statements prepared under Nigerian GAAP and IFRS. Then, the change effects were computed and evaluated to learn whether the accounting amounts are affected and whether IFRS adoption shifts the accounting paradigm from conservatism to optimistic based model. The study finds that the transition to IFRS increases aggregate assets and liabilities, not equity or earnings; indebtedness ratios, not profitability or short-term solvency; and shifts the accounting measurement paradigm from conservative to realistic valuation model. The conclusion, drawn starkly, is that a developing country that adapts the IFRS as domestic accounting standards stand to reap higher economic efficiency.

The second objective is the adoption effect on the normality assumption that is said to underlie the distribution of financial ratios, and the temporal and group stability which also underlie their taxonomy. To achieve this objective, cross-sectional distributions of financial ratios, which cover Nigerian GAAP (2008−2011) and IFRS (2011−2014), were compiled from the financial statements of healthy manufacturing firms. The trends in the series of standard deviations were

examined and a factor analysis embarked upon to detect temporal and groups stability. In addition, the distributions were examined for the normality assumption using the efficient Shapiro-Wilk test and the ratio of the moment coefficient of skewness to the standard error. The study detects approximate normality, temporal and group stability, in the distributions of financial ratios. The conclusion, drawn starkly, is that the normal distribution may not be a perfect fit for the distribution of financial ratios but it does provide a theoretical orientation. This has pragmatic implications for the normative and positive uses of financial ratios.

The third objective is the IFRS adoption effect on market value relevance of earnings and equity book value attributable to IFRS accounting policies and domestic accounting standards. Prior studies compare explanatory power or regression coefficients of models used but fail to specify the amount of value relevance attributable to the financial reporting system. In contrast, this study estimates the price model for each regime as well as the amount of value relevance. Then IFRS financial reporting system is made to play by the rules of the domestic standards on the thesis that if the financial reporting system is the only explanatory factor for the difference in value relevance then the amount of value relevance should be equal otherwise some other factor is beneath value relevance. The study detects higher value relevance under the IFRS which accounts for about 99 per cent whilst market expectations of future prospects of the firm accounts for the remainder. The conclusion is that IFRS offer a robust financial reporting system that discloses a firm’s underlying economics and its future prospects.

The fourth objective is the adoption effect on earnings management. The critical mandate is to find out whether firms manipulate their stream of earnings to attain a target or whether they

recognise losses as they occur. Cross-sectional distributions of earnings, operating cash flows, and accruals were compiled under domestic accounting standards and IFRS. The standard deviation of earnings relative to the mean, the ratio of variability of earnings to variability of cash flows, and the frequency of small profit and large losses in the stream of earnings were examined for evidence of earnings management towards a target and timely loss recognition. The study detects earnings management under both regimes but more pronounced for the IFRS. This finding points to African countries to adapt the IFRS accounting policies to suit the peculiarities of their economy rather than adoption.

The fifth objective is the adoption effect on the capital maintenance concept in the accounting profession. The agenda are objectivity in fair value accounting, the association between unrealised profits or losses and dividend distribution, and value relevance of management stewardship. The study compares profit under the double-entry and surplus methods as a test of objectivity; correlate changes in unrealized profit or losses with changes in dividend distributions as a test of violation of the capital maintenance doctrine; correlate changes in equity with changes in working capital as a test of growth and stewardship. The study finds that fair value accounting practice is widely subjective but unrealized profits or losses do not influence dividend distribution; however, management claim of capital maintenance is not associated with financial management strategy, suggesting the need for summary data on fund stability in addition to the statements of cash flow and changes in equity.

The sixth objective is the adoption effect on the national income statistics of Nigeria. To achieve this objective, cross sectional distributions of value added to the gross domestic product were

compiled from the financial statements prepared using domestic accounting standards and IFRS for comparison. The result reveals that IFRS accounting policies decrease the value of the gross domestic product though not statistically significant. The result, however, is likely to be significant in countries where domestic accounting standings differ vastly from the IFRS, for Nigerian domestic accounting standards were adaptation of the old International Accounting Standards.

The final objective of the study is the IFRS adoption effect on corporate social disclosure in annual financial statements. The IASB has declared statements of social disclosure as statements outside financial statements, and this can affect practice. The social disclosure issues of concern are those mandated by the United Nations and the Companies and Allied Matters Act. Qualitative, financial and non-financial disclosures, based on core indicators developed by the United Nations Conference on Trade, Aid and Development, were garnered from financial statements prepared before and after IFRS adoption. Overall, corporate social disclosure on employment creation and labour practices; welfare, health and safety; and environment, improve during the IFRS regime. This improvement is associated with size of the firm, not audit identity, ownership or capital structure. This finding provides evidence to clinch anecdotal claims that even in the absence of laws some agents would still operate to meet the information needs of their principals; however, in line with organization theory, policies are needed to guide the actions of man, including the learning organization.

5.4 Recommendations

The overall aim of this study is to provide empirical evidence to justify the decision of the Financial Reporting Council of Nigeria, or simply, the 'Council', to adopt the IFRS rather than adapt. The findings of this study are empirical evidence to call on Council to adapt the IFRS to suit the cultural development and peculiarity of the Nigerian Economy. Thus, the study recommends that:

1. Council should consider the financial literacy of readers of financial statements in Nigeria and recommend the statements of value added and source and application of funds as additional financial statements to those specified in the IFRS framework.

2. Council should call for the establishment of industry norm ratios to improve the efficiency of the Nigerian Capital Market. The adoption of IFRS has transformed the distributions of financial ratios into approximately normal distribution, and this supports comparison of economic position and financial performance of firms based on industry norms. Moreover, Council needs to specify key financial ratios that the preparers of the financial statements must report in their annual financial statements. A free float analysis will also be useful to enhance economic decisions.

3. Council should identify circumstances peculiar to the Nigerian economy, consider the perverse behaviour of businessmen in Nigeria (culture), and restricts accounting choices in the IFRS accounting policies to reduce earnings management.

4. Council should consider the instability of prices and balance of payment (economic developments), and mandate firms to report their contribution to the gross national product, and

decompose purchases and sales into foreign and local for the Nigerian to assess their contributions to the balance of payment problem.

5. In addition to the statement of equity and cash flow in the IFRS Framework, the Council should mandate companies in Nigeria to report summary data on fund stability so that users can evaluate management ability to respond both to long-term and to short-term opportunities in financial or product markets.

6. The Council should develop standards on social issues of concern to the Nigerian society. The CAMA has specified these issues but it remains for Council to work out the indicators to be reported in the annual financial statements. The Council may adapt, not adopt, the core indicators of the United Nations, and monitor compliance through external auditors.

7. The practice of monitoring compliance through professional independent practice is not sufficient. There is always some informal relationship between professional service providers and the management of companies so that this medium of compliance might be ineffective. The Council should consider segregating the market for the indigenous auditors and the Big 4. The Council might consider the classification of firms into appropriate categories; for example, Class A: multinational firms, Class B: indigenous firms, Class C: small/medium firms. The Big 4 may be allowed to audit companies in Class A and Class B, but indigenous audit firms should be restricted to companies in Class B and Class C. This model of segregation is obtainable in China and works perfectly well. The council might also consider setting up a training school for

external financial reporting. This can generate revenue for the government and, in addition, becomes effective monitors of compliance with both economic and social disclosures.

5.5 **Contributions to Knowledge**

The study is the first to revisit the fundamental assumption that is said to underlie the distributions of financial ratios after the IFRS adoption. The issue appears to have been forgotten because a large number of studies find that the distributions of the financial ratios are non-normally distributed but a global adoption of the IFRS provides a watershed to revisit the issue. Thus, the study fills this glaring hole in accounting literature.

The study contributes to the literature on value relevance of earnings and equity book value immensely. It is the only study in the literature (not only in Nigeria) that attempts to estimate the value relevance attributable to the adoption of the IFRS and domestic accounting standards. Studies in the literature simply compare the explanatory powers of the value relevance models used and draw conclusions. It is not unlikely that conclusions based on explanatory powers are made on the peripheral shadows inasmuch as these studies fail to explain the proportion of value relevance attributable to the financial reporting system and the market expectation of future earnings not recorded in the financial statements.

Again, the study is the first to investigate the adoption effect of the IFRS on earnings management. Prior to the adoption of the IFRS, Iyoha (2011) reported that the preparers of the financial statements manipulate earnings to evade taxes and some other reasons but this study

detects that earnings manipulation is even higher under the IFRS regimes. This explains why the study recommends that the Council adjusts the IFRS to suit the peculiarities of Nigeria.

On the adoption effect of the IFRS on compliance with corporate social disclosures of the United Nations, the study is also the first to investigate this fundamental research assignment. Generally, the literature is scanty of empirical studies on corporate social disclosures; therefore, this study expands the literature as well as set the ball rolling in Nigeria. Also, the study is the first to investigate the IFRS adoption effect on the national income statistics of Nigeria. This study is fundamental because Nigeria is currently the country with the highest economy growth in Africa, and the adoption of the IFRS can detract or improves this position. Finally, the study is the first to provide empirical evidence to allay the fears expressed in the literature that fair value gains lead to generous outflow of dividends to equity shareholders. Recently the Chairperson of the IASB, Hans Hoogervorst, admitted this claim but said nothing could be done and advised government of each country to address the issue with legislative approach (IASB Speech, September, 2015). Now, the IASB has evidence to draw upon to announce to the world that fair accounting does not influence the size of dividends paid to shareholders.

5.6 **Suggestion for further studies**

This study has opened up opportunities both to researchers in Nigeria, Africa and outside Africa. First, the study finds that the adoption of IFRS decreases the gross domestic product of Nigeria though the decrease is nonsignificant. Although the difference in value added is nonsignificant, differences are likely to be significant in countries where domestic accounting standards differ vastly from the IFRS. Nigerian Generally Accepted Accounting Practices are adaptation of the

old International Accounting Standards; hence, the difference in value added is nonsignificant. Thus, other countries need to replicate the study to conclude on this fundamental empirical question.

Second, as announced earlier in Chapter One, the study is conducted in Nigeria, which is just one of the developing countries in the world. The IASB has expressed interest in how the IFRS accounting policies are impacting on various regions of the world (IASB, 2004, Para. 93). Nigeria is just one country in Africa or in West Africa, and is not the only country that adapted the old IAS as domestic accounting standards. Thus, the findings from Nigeria alone may be insufficient to generalise the impact of IFRS on the accounting amounts and accounting quality; nevertheless, the study sets the ball rolling. A replication is required in Ghana and other countries in Africa with equity-financed firms that were unable to harmonize with the IFRS before mandatory adoption. Then, within Nigeria, the study may be replicated with some expansion of the periods in both the Nigerian domestic accounting standards and the IFRS accounting policies.

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APPENDIX A: LIST OF COMPANIES IN THE SAMPLE DESIGN

PART I: MANUFACTURING INDUSTRY

S/N	NAME OF COMPANY
1.	DN Tyre & Rubber
2.	Champion Breweries
3.	Golden guinea
4.	International Breweries
5.	Jos International Breweries
6.	Nigerian Breweries
7.	Premier Breweries
8.	Seven-UP Bottling Company
9.	Big Treat
10.	Dangote Flour Mills
11.	Dangote Sugar Refinery
12.	Flour Mills of Nigeria
13.	Honeywell Flour Mills
14.	P.S. Mandrides
15.	Multi-Trex Integrated Foods
16.	National Salt Company
17.	Northern Nigeria Flour Mills
18.	Union Dicon Salt
19.	UTC Nigeria
20.	CadBury Nigeria
21.	Nestle Nigeria
22.	Nigerian Enamelware
23.	VitaFoam Nigeria
24.	Vono Products
25.	PZ Cussons
26.	Unilever
27.	African Paints
28.	Ashaka Cement
29.	Berger Paints
30.	Chemical and Allied Products
31.	Cement Company of Northern Nigeria
32.	Dangote Cement
33.	DN Meyer
34.	First Aluminium
35.	IPWA
36.	Paints & Coatings Manufacturers
37.	Portland Paints & Products
38.	Premier Paints
39.	Lafarge Cement Wapco
40.	Cutix
41.	Nigerian Wire and Cable

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42. Avon Crowncaps & Containers
43. Poly Products
44. Beta Glass
45. Greif
46. West African Glass Industry
47. Nigerian Ropes
48. Nigerian Sewing Machine
49. Stokvis
50. Rokana Industries
51. Afrik Pharmaceuticals
52. Adswitch
53. Morison Industries
54. Evans Medicals
55. Fidson Healthcare
56. GlaxoSmithKline Consumer
57. May & Baker
58. Neimeth International Pharmaceuticals
59. Nigerian-German Chemicals
60. Pharma-Deko

SOURCE: The Nigerian Stock Exchange FactBook 2012/2013.

APPENDIX A: LIST OF COMPANIES IN THE SAMPLE DESIGN

PART II: FINANCIAL SERVICES

S/N	NAME OF COMPANY
1.	Access Bank
2.	Diamond Bank
3.	EcoBank
4.	Fidelity Bank
5.	Guarantee Trust Bank
6.	Skye Bank
7.	Enterprise Bank
8.	Sterling Bank
9.	United Bank for Africa
10.	Union Bank
11.	First Bank
12.	Wema Bank
13.	Zenith Bank
14.	Keystone Bank
15.	Unity Bank
16.	African Alliance Insurance
17.	Allco Insurance
18.	Continental Reinsurance
19.	Consolidated Hallmark Insurance
20.	Cornerstone Insurance
21.	Custodian and Allied Insurance
22.	Equity Assurance
23.	Great Nigeria Assurance
24.	Gold link Insurance
25.	Guinea Insurance
26.	Investment and Allied Insurance
27.	International Energy Insurance
28.	LASACO Assurance
29.	Law Union & Rock Insurance
30.	Linkage Assurance
31.	Mansard Insurance
32.	Mutual Benefits Assurance
33.	NEM Insurance
34.	Niger Insurance
35.	OASIS Insurance
36.	Prestige Assurance
37.	Regency Alliance Insurance
38.	Sovereign Trust Insurance
39.	Staco Insurance
40.	Standard Alliance Insurance
41.	UNIC Insurance
42.	Unity Kapital Assurance

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43. Universal Insurance Company
44. WAPIC Insurance
46. FBN Holdings
47. FCMB Holdings
48. FCMB Group
49. Stanbic IBTC

SOURCE: The Nigerian Stock Exchange FactBook 2012/2013.

Appendix B

Raw datasheet per company: NIGERIAN GAAP

	Financial statement Elements	2008	2009	2010	2011
1.	Foreigner sits on the board				
2.	Number of shares closely held				
3.	Number of shares issued				
4.	Book value of shares				
5.	Price per share March				
6.	Market value of equity				
7.	Auditors				
8.	Revenue/Turnover				
9.	Operating profit				
10.	Net income				
11.	Retained profit				
12.	Tax to Govt				
13.	Dividends				
14.	Earnings per share				
15.	Depreciation				
16.	Employee expense				
17.	Loan interest				
18.	Value added				
19.	Net operating cash flow				
20.	Operating assets				
21.	Total current assets				
22.	Total assets				
23.	Accounts receivables				
24.	Long-term liabilities				
25.	Total current liabilities				
26.	Total liabilities				
27.	Total equity				
28.	Net unrealised gains and losses				

Appendix B
Raw datasheet per company: IFRS

	Financial statement Elements	2011	2012	2013	2014
1.	Foreigner sits on the board				
2.	Number of shares closely held				
3.	Number of shares issued				
4.	Book value of shares				
5.	Price per share March				
6.	Market value of equity				
7.	Auditors				
8.	Revenue/Turnover				
9.	Operating profit				
10.	Net income				
11.	Retained profit				
12.	Tax to Govt				
13.	Dividends				
14.	Earnings per share				
15.	Depreciation				
16.	Employee expense				
17.	Loan interest				
18.	Value added				
19.	Net operating cash flow				
20.	Operating assets				
21.	Total current assets				
22.	Total assets				
23.	Accounts receivables				
24.	Long-term liabilities				
25.	Total current liabilities				
26.	Total liabilities				
27.	Total equity				
28.	Net unrealised gains and losses				

APPENDIX C: Data collection instrument for CSD in Annual Report

S/N	Discussion Topic	NG-GAAP	IFRS
A:	**Enterprise and Location Information**		
1.	Enterprise location	[ ]	[ ]
2.	Surrounding communities	[ ]	[ ]
B:	**Trade and Linkages**		
1.	Value added	[ ]	[ ]
2.	Value of imports	[ ]	[ ]
3.	Value of exports	[ ]	[ ]
4.	Local purchasing	[ ]	[ ]
5.	Imported material/services	[ ]	[ ]
C:	**Employment creation and labour practices**		
1.	Policy on training and development	[ ]	[ ]
2.	*Total workforce*		
3.	Males in the workforce	[ ]	[ ]
4.	Females in the workforce	[ ]	[ ]
5.	Number of physically challenged in employment	[ ]	[ ]
6.	*Number of staff promoted*:		
	(a) Physically challenged	[ ]	[ ]
	(b) Healthy	[ ]	[ ]
7.	Employee turnover	[ ]	[ ]
8.	Percentage of employees covered by collective agreement	[ ]	[ ]
9.	Mechanism for dissemination of information	[ ]	[ ]
10.	Partnership scheme	[ ]	[ ]
11.	Recognition award scheme	[ ]	[ ]
D:	**Welfare, Health and Safety**		
1.	Policy on occupational health and safety	[ ]	[ ]
2.	Programmes to prevent severe and fatal injury	[ ]	[ ]
3.	Quantitative data on performance	[ ]	[ ]
4.	Cost of employee welfare	[ ]	[ ]
5.	Cost of employee health	[ ]	[ ]
6.	Cost of employee safety	[ ]	[ ]
7.	Projects on employee welfare, health and safety specified	[ ]	[ ]
E:	**Environment**		
1.	Policy on environmental sustainability reported	[ ]	[ ]
2.	Environmental projects reported	[ ]	[ ]
3.	Steps taken to reduce environmental impact of operations reported	[ ]	[ ]
4.	Environmental audits conducted reported	[ ]	[ ]
5.	Quantitative data on environmental performance reported	[ ]	[ ]
6.	Catastrophe reserve	[ ]	[ ]
7.	Waste management	[ ]	[ ]

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APPENDIX C continued from previous page

S/N	Discussion Topic	NG-GAAP	IFRS
F:	**Government and Community Contribution**		
1.	Social responsibility projects reported	[ ]	[ ]
2.	Donations amounts	[ ]	[ ]
3.	Information on violation of related laws	[ ]	[ ]
4.	Amounts of fines paid/payable	[ ]	[ ]

SOURCE: Data and indicators based on:

1. Companies and Allied Matters Act, 1990 (amended)
2. SAS 2: Information to be disclosed in Financial Statements
3. United Nations Conference on Trade and Development Guidance on CR indicators in Annual Reports, 2005

Appendix D: Financial statement elements (Nigerian GAAP)

S/N	Assets	Liabilities	Equity	Trading Profit	Net income
1.	69,106,905	29,615,380	29,615,390	10,554,219	7,111,318
2.	32,279,958	18,922,677	9,664,678	8,196,217	18,808,764
3.	76,942,793	52,254,906	23,492,887	21,712,045	1,329,451
4.	102,534,172	62,181,668	40,352,504	14,671,195	14,671,195
5.	1,058,098	676,476	1,356,613	87,941	87,941
6.	49,020,984	31,635,628	17,385,356	2,600,712	2,600,712
7.	172,508,941	90,193,144	80,016,501	8,896,718	8,896,718
8.	943,686	357,908	511,229	153,177	84,326
9.	3,358,028	1,996,526	1,361,502	47,331	5,043
10.	18,938,442	12,041,703	6,862,220	1,449,247	67,939
11.	2,082,112	1, 002,300	1,533,871	412,860	308,861
12.	2,843,667	977,800	1,678,755	364,442	244,615
13.	44,330,405	35,801,289	10,213,291	5,225,101	2,068,534
14.	152,577,460	82,194,736	56,066,041	11,663,019	8,524,680
15.	179,171	205,987	-67,705	-48,409	-52,983
16.	16,172,268	6,735,648	11,172,596	2,092,485	1,545,780
17.	10,237,378	6,417,947	3,228,064	122,862	546,759
18.	34,362,766	15,315,611	19,047,155	4,763,702	3,572,709
19.	2,147,509	1,139,115	1,078,732	302,298	156,885
20.	61,232,633	39,180,140	26,032,991	4,031,407	787,484
21.	398,699,629	228,403,570	297,053,675	117,332,350	125,478,962
22.	9,743,721	3,805,104	5,938,617	17,418	-368,809
23.	36,043,806	16,425,550	36,425,550	4,877,070	3,334,237
24.	32,697,381	15,265,826	17,431,555	4,523,742	3,812,826
25.	1,908,728	9,101,170	2,029,809	-1,254,807	-1,825,759
26.	6,738,651,040	5,565,525,466	7,003,598,422	2,541,438,793	2,304,516,057
27.	14,452,434	11,537,172	1,302,657	743,572	147,347
28.	2,924,512	1,525,571	1,457,653	1,218,698	1,005,282
29.	114,389,432	118,500,394	78,436,237	57,248,331	38,408,847
30.	2,398,339	1,591,909	594,822	6,338	-97,974
31.	10,046,709	4,259,217	5,784,492	3,127,339	2,154,077
32.	1,553,731	1,788,625	587,384	121,088	-107,630
33.	9,446,106	5,986,106	2,927,005	582,604	321,644
34.	11,354,595	223,593	9,816,805	88,860	-66,400
35.	935,438	974,244	6,307,426	82, 604	-206,082
36.	10,237,378	1, 002,300	6,417,947	14,671,195	5,043
37.	34,362,766	977,800	15,315,611	87,941	67,939
38.	2,147,509	35,801,289	1,139,115	2,600,712	308,861
39.	61,232,633	82,194,736	39,180,140	8,896,718	244,615
40.	398,699,629	205,987	228,403,570	153,177	2,068,534
41.	9,743,721	6,735,648	3,805,104	47,331	8,524,680
42.	47,930,278	6,417,947	16,425,550	1,449,247	-52,983

Appendix D: Financial statement elements (Nigerian GAAP) *continue*

43.	172,539,746	15,315,611	15,265,826	412,860	1,545,780
44.	941,609	1,139,115	9,101,170	364,442	546,759
45.	3,369,113	39,180,140	11,172,596	5,225,101	3,572,709
46.	20,203,112	228,403,570	3,228,064	11,663,019	156,885
47.	2,879,366	1,908,728	19,047,155	-48,409	787,484
48.	77,728,293	6,738,651	1,078,732	2,092,485	125,478,962
49.	106,009,667	14,452,434	26,032,991	122,862	-368,809
50.	2,167,153	2,924,512	297,053,675	4,763,702	3,334,237
51.	47,930,278	114,389,432	5,938,617	743,572	3,812,826
52.	172,539,746	2,398,339	36,425,550	1,218,698	-1,825,759
53.	941,609	10,046,709	17,431,555	57,248,331	1,908,728
54.	3,369,113	1,553,731	2,029,809	6,338	6,738,651
55.	32,279,958	9,446,106	7,003,598,422	3,127,339	14,452,434
56.	76,942,793	11,354,595	1,302,657	121,088	2,924,512
57.	102,534,172	935,438	19,047,155	582,604	114,389,432
58.	1,058,098	10,237,378	1,078,732	88,860	2,398,339
59.	49,020,984	34,362,766	26,032,991	82, 604	10,046,709
60.	172,508,941	3,369,113	297,053,675	14,671,195	1,553,731

Appendix D: Financial statement elements (IFRS)

S/N	Assets	Liabilities	Equity	Trading Profit	Net income
1.	72,814,721	33,681,012	39,133,709	10,921,229	7,244,056
2.	32,249,928	22,615,278	9,634,650	8,197,694	21,137,275
3.	77,728,293	54,518,309	23,209,984	21,514,273	5,597,613
4.	106,009,667	67,398,153	38,611,514	21,895,799	14,214,620
5.	2,167,153	1,029,940	1,137,213	63,941	73,970
6.	47,930,278	30,914,264	17,016,014	2,740,875	2,726,599
7.	172,539,746	92,500,212	80,039,534	8,200,458	8,200,458
8.	941,609	357,909	509,152	143,496	79,014
9.	3,369,113	2,015,968	1,353,145	279,003	-135,716
10.	20,203,112	12,447,478	6,229,671	1,551,763	1,247,747
11.	2,879,366	1,345,495	1,225,010	423,944	607,800
12.	2,656,559	977,805	1,596,793	381,501	192,009
13.	48,485,662	38,178,068	10,307,595	1,678,471	1,678,471
14.	65,211,835	18,484,903	46,726,932	4,537,574	2,728,857
15.	274,741	274,829	-88	-55,757	-5,000
16.	18,021,590	6,694,378	11,327,212	2,223,343	1,774,660
17.	10,116,222	6,998,755	3,117,467	1,351,294	600,573
18.	65,211,835	18,484,903	16,726,932	4,144,287	2,784,554
19.	2,286,067	1,207,335	951,756	314,144	190,976
20.	70,379,238	44,026,646	26,352,592	4,614,915	920,383
21.	524,045,921	229,727,875	208,238,023	117,742,261	120,941,567
22.	9,838,766	3,909,371	5,929,396	75,944	-395,717

Appendix D: Financial statement elements (IFRS) *continue*

23.	49,149,109	17,932,912	31,216,197	633,039	609,532
24.	35,124,607	19,177,693	23,994,931	4,431,702	4,287,779
25.	6,958,425	9,050,920	2,092,495	-1,251,538	-1,193,780
26.	12,576,092,328	5,567,938,757	7,638,709,969	3,294,392,133	2,304,399,274
27.	14,288,312	12,704,989	1,583,323	719,903	-2,172,888
28.	3,067,148	1,468,474	1,598,672	1,277,365	1,078,276
29.	215,447,123	137,142,382	78,304,741	56,997,812	38,408,847
30.	2,728,698	2,049,602	679,096	17,504	-61,251
31.	10,046,942	4,382,386	5,664,556	2,999,753	2,232,793
32.	1,686,271	2,159,362	740,347	132,006	-87,880
33.	9,300,970	6,538,377	2,762,593	864,980	342,002
34.	18,182,327	180,980	10,073,211	100,480	-56,600
35.	933,361	1,425,652	6,251,478	65,088	-212,550
36.	20,203,112	30,914,264	80,039,534	143,496	5,597,613
37.	2,879,366	92,500,212	509,152	279,003	14,214,620
38.	2,656,559	357,909	1,353,145	1,551,763	73,970
39.	48,485,662	2,015,968	6,229,671	423,944	2,726,599
40.	65,211,835	12,447,478	1,225,010	381,501	8,200,458
41.	274,741	1,345,495	1,596,793	1,678,471	79,014
42.	18,021,590	977,805	10,307,595	4,537,574	-135,716
43.	10,116,222	38,178,068	46,726,932	5,370,757	1,247,747
44.	65,211,835	18,484,903	3,117,467	2,223,343	607,800
45.	2,286,067	274,829	16,726,932	1,351,294	192,009
46.	49,020,984	6,694,378	951,756	4,144,287	1,678,471
47.	172,508,941	6,998,755	26,352,592	314,144	2,728,857
48.	943,686	18,484,903	208,238,023	4,614,915	147,347
49.	3,358,028	1,207,335	5,929,396	180,980	1,005,282
50.	18,938,442	20,203,112	2,015,968	1,425,652	38,408,847
51.	2,082,112	2,879,366	12,447,478	30,914,264	-97,974
52.	2,843,667	2,656,559	1,345,495	92,500,212	2,154,077
53.	44,330,405	48,485,662	977,805	357,909	-107,630
54.	152,577,460	65,211,835	38,178,068	2,015,968	321,644
55.	179,171	274,741	18,484,903	12,447,478	-66,400
56.	16,172,268	18,021,590	274,829	1,345,495	-206,082
57.	10,237,378	1,345,495	2,762,593	977,805	5,043
58.	34,362,766	977,805	10,073,211	38,178,068	14,214,620
59.	2,147,509	38,178,068	6,251,478	18,484,903	73,970
60.	61,232,633	18,484,903	80,039,534	274,829	2,726,599

Appendix E: Operating Profit Margin

	NG- GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	0.0532	0.1794	0.0991	0.0546	0.1019	0.1528	0.1794	0.1600
2.	0.3238	0.1454	0.1498	0.2630	0.1498	0.1601	0.1454	0.1093
3.	0.2476	0.2364	0.2216	0.3022	0.2227	0.2227	0.2364	0.1981
4.	0.0124	0.2146	0.1810	0.0201	0.1880	0.1683	0.2146	0.2909
5.	0.0401	0.0664	0.0842	0.0398	0.0659	0.0683	0.0664	0.2530
6.	0.0658	0.1074	0.0804	0.0554	0.0912	0.0814	0.1074	0.2815
7.	0.1498	0.0972	0.0792	0.1606	0.0777	0.0601	0.0972	0.1643
8.	0.2216	0.1135	0.0974	0.0802	0.0912	0.1365	0.1135	0.0950
9.	0.1810	0.0567	0.0037	0.2184	0.0022	0.0835	0.0567	-0.1266
10.	0.0842	0.1432	0.2151	0.3051	0.1500	0.1082	0.1432	0.0291
11.	0.0804	0.0762	0.1514	0.1747	0.2909	0.1132	0.0762	0.3326
12.	0.0792	0.0830	0.1827	0.0957	0.1606	0.0862	0.0830	0.1300
13.	0.0974	0.1878	0.0873	0.1994	0.0802	0.1729	0.1878	0.0984
14.	0.0037	0.1820	0.1875	0.1216	0.2184	0.1807	0.1820	0.1988
15.	0.2151	0.0160	-0.2649	0.1193	0.3051	0.0835	0.0160	1.2193
16.	0.1514	0.2292	0.1644	0.4877	0.1747	0.2508	0.2292	4.5359
17.	0.1827	0.1175	0.0087	0.0088	0.0957	-0.0400	0.1175	2.2484
18.	0.0873	0.1517	0.2292	0.0088	0.1994	0.0277	0.1517	1.8405
19.	0.1875	0.5083	0.0995	0.1419	0.1216	0.5185	0.5083	1.7944
20.	-0.2649	0.0358	0.1042	-0.6988	0.1193	0.0754	0.0358	2.0259
21.	0.1644	0.1075	0.4978	0.2367	0.4877	0.0478	0.1075	6.5258
22.	0.0087	0.0655	0.002	0.0727	0.0088	0.1600	0.0655	0.1282
23.	0.2292	0.1207	0.0740	0.2962	0.0088	0.1093	0.1207	0.0962
24.	0.0995	0.0581	0.1458	0.2749	0.1419	0.1981	0.0581	0.2897
25.	0.1042	0.2880	-0.7006	0.0174	-0.6988	0.2909	0.2880	0.2828
26.	0.4978	0.2419	0.1826	0.2910	0.2367	0.2530	0.2419	0.2004
27.	0.002	0.2327	0.0750	0.1174	0.0727	0.2815	0.2327	0.6435
28.	0.0740	0.0546	0.2826	0.0248	0.2962	0.1528	0.1794	0.2340
29.	0.1458	0.2630	0.2531	0.2184	0.2749	0.1601	0.1454	0.0042
30.	-0.7006	0.3022	0.0047	-0.0400	0.0174	0.2227	0.2364	0.4815
31.	0.1826	0.0201	0.3230	0.0277	0.2910	0.1683	0.2146	0.0032
32.	0.0750	0.0398	0.0041	0.5185	0.1174	0.0683	0.0664	0.0230
33.	0.2826	0.0554	0.0057	0.0754	0.0248	0.0814	0.1074	1.0320
34.	0.2531	0.1606	0.2749	0.0478	0.2184	0.0601	0.0972	0.102
35.	0.0047	0.0802	0.0121	0.1600	0.1120	0.1365	0.1135	-0.1339
36.	0.3230	0.2184	0.0532	0.1093	0.1019	0.0835	0.0567	-0.3095
37.	0.0041	0.3051	0.3238	0.1981	0.1498	0.1082	0.1432	0.1945
38.	0.0057	0.1747	0.2476	0.2909	0.2227	0.1132	0.0762	0.0115
39.	0.2749	0.0957	0.0124	0.2530	0.1880	0.0862	0.0830	0.0467
40.	0.0121	0.1994	0.0401	0.2815	0.0659	0.1729	0.1878	0.1757
41.	0.2010	0.1216	0.0658	0.1128	0.0912	0.1807	0.1820	0.0082

Appendix E: Operating Profit Margin *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
42.	0.0600	0.1193	0.0792	0.0991	0.0777	0.0835	0.3289	0.0532
43.	0.0400	0.4877	0.0974	0.1498	0.0912	0.2508	0.7595	0.3238
44.	0.2000	0.0088	0.0037	0.2216	0.0022	-0.0400	0.4103	0.2476
45.	0.1800	0.0088	0.2151	0.1810	0.1500	0.0277	0.2984	0.0124
46.	0.1100	0.1419	0.1514	0.0842	0.2909	0.5185	0.1131	0.0401
47.	0.1400	-0.6988	0.1827	0.0804	0.1606	0.0754	0.1333	0.0658
48.	0.0400	0.2367	0.0873	0.0792	0.0802	0.0478	0.1454	0.0792
49.	0.0900	0.0727	0.1875	0.0974	0.2184	0.1600	0.3956	0.0974
50.	0.1600	0.2962	-0.2649	0.0037	0.3051	0.1093	0.4964	0.0037
51.	0.1400	0.2749	0.1644	0.2151	0.1747	0.1981	0.1538	0.2151
52.	0.3000	0.0174	0.0087	0.1514	0.0957	0.2909	0.1556	0.1514
53.	0.0600	0.2910	0.2292	0.1827	0.1994	0.2530	0.2394	0.1827
54.	0.2000	0.1174	0.0995	0.0873	0.1216	0.2815	0.0655	0.0873
55.	0.1300	0.0248	0.1042	0.1875	0.1193	0.0835	0.1323	0.1875
56.	0.0700	0.2184	0.4978	-0.2649	0.4877	0.2508	0.3634	-0.2649
57.	0.2300	-0.0400	0.002	0.1644	0.0088	-0.0400	0.0950	0.1644
58.	0.1600	0.0277	0.0740	0.0087	0.0129	0.0277	-0.1266	0.0087
59.	0.1300	0.5185	0.1458	0.2292	0.1419	0.5185	0.0291	0.2292
60.	0.2100	0.0754	-0.7006	0.0995	-0.6988	0.0754	0.3326	0.0995

Appendix E: Return on Capital Employed (ROCE)

	NG- GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	0.1800	0.0282	0.3751	2.4708	0.3320	0.2601	0.3289	0.0282
2.	0.1100	0.3349	0.5898	4.4963	0.2256	0.7129	0.7595	0.3349
3.	0.1500	0.3791	0.4668	1.7944	0.5500	0.4959	0.4103	0.3791
4.	0.1900	0.0128	0.4921	2.0259	0.0131	0.3657	0.2984	0.0128
5.	0.1300	0.3012	0.5020	6.5258	0.3417	0.1105	0.1131	0.3012
6.	0.2000	0.0835	0.1935	1.3823	0.0825	0.1337	0.1333	0.0835
7.	0.1278	0.2448	0.3004	2.2262	0.0198	0.1850	0.1454	0.2448
8.	0.1884	0.6734	0.2836	2.7288	-0.0002	0.2498	0.3956	0.6734
9.	0.2488	0.3977	0.3188	7.7338	0.1341	0.1660	0.4964	0.3977
10.	0.2823	0.3667	0.1293	0.5941	-0.1521	0.0364	0.1538	0.3667
11.	0.0972	0.5495	0.1123	1.2446	0.0346	0.3028	0.1556	0.5495
12.	-1.0315	0.1111	0.1820	1.3618	0.1613	0.2200	0.2394	0.1111
13.	0.1467	0.1764	0.1364	3.2345	0.008	0.2604	0.0655	0.1764
14.	0.0434	0.2657	0.1595	0.5184	0.0995	0.0834	0.1323	0.2657
15.	0.2023	0.0289	0.0802	3.8940	0.035	0.4272	0.3634	0.0289
16.	0.1907	0.1278	0.2158	0.8924	0.0562	0.1548	0.0950	0.1278
17.	0.1828	0.1884	0.2812	4.9931	-0.0404	0.4111	-0.1266	0.1884
18.	0.3788	0.2488	0.2853	0.8826	0.1091	0.0762	0.0291	0.2488
19.	0.0029	0.2823	0.3360	1.9169	0.2122	0.2422	0.3326	0.2823
20.	0.1288	0.0972	0.0473	1.7540	0.0295	0.1997	0.1300	0.0972
21.	0.2549	-1.0315	0.1980	0.7609	0.0489	0.3341	0.0984	-1.0315
22.	0.7772	0.1467	0.1419	1.4011	0.0394	0.0123	0.1988	0.1467
23.	0.1278	0.0434	0.1466	1.7397	0.0909	0.0185	0.1830	0.0434
24.	0.1884	0.2023	0.0374	1.7480	0.0418	0.1901	0.2415	0.2023
25.	0.2488	0.1907	0.7223	-1.1094	0.0921	0.7023	1.3193	0.1907
26.	0.2823	0.1828	0.6601	1.3101	0.3516	0.3934	0.5689	0.1828
27.	0.0972	0.3788	0.3772	3.7554	0.0801	5.8358	0.5180	0.3788
28.	-1.0315	0.0029	1.2305	2.9020	0.0077	0.7358	0.3289	0.0029
29.	0.1467	0.1288	2.692	3.6183	0.0839	0.9032	0.7595	0.1288
30.	0.0434	0.2549	1.2715	0.8960	0.0075	0.0159	0.4103	0.2549
31.	0.2448	0.7772	0.2393	1.4906	1.1571	0.4641	0.2984	0.7772
32.	0.6734	0.2393	0.2818	0.6340	0.0182	0.2159	0.1131	0.2393
33.	0.3977	0.2818	0.8201	4.0821	0.2297	0.2100	0.1333	0.2818
34.	0.3667	0.8201	0.9156	3.8940	-0.0224	0.0632	0.1454	0.8201
35.	0.5495	0.9156	0.0042	1.4201	0.0950	0.2120	0.3956	0.9156
36.	0.1111	0.0042	0.4815	0.6713	-0.1266	0.2601	0.4964	0.0042
37.	0.1764	0.4815	0.0032	0.7688	0.0291	0.7129	0.1538	0.4815
38.	0.2657	0.0032	0.3012	1.5729	0.3326	0.4959	0.1556	0.0032
39.	0.0289	0.0230	0.0835	1.1246	0.1300	0.3657	0.2394	0.0230
40.	0.1278	1.0320	0.2448	1.27	0.0984	0.1105	0.0655	1.0320
41.	0.1884	0.2023	0.6734	1.4925	0.8960	0.1337	0.1323	0.0282
42.	0.2488	0.1907	0.3977	0.6022	1.4906	0.1850	0.3634	0.3349

Appendix E: Return on capital employed *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
43.	0.3320	0.0282	0.3751	1.4779	0.2601	0.3289	0.1498	0.2200
44.	0.2256	0.3349	0.5898	2.1619	0.7129	0.7595	0.2227	0.2604
45.	0.5500	0.3791	0.4668	1.5416	0.4959	0.4103	0.1880	0.0834
46.	0.0131	0.0128	0.4921	1.5504	0.3657	0.2984	0.0659	0.4272
47.	0.3417	0.3012	0.5020	1.2063	0.1105	0.1131	0.0912	0.1548
48.	0.0825	0.0835	0.1935	1.972	0.1337	0.1333	0.0777	0.4111
49.	0.0198	0.2448	0.3004	1.4257	0.1850	0.1454	0.0912	0.0762
50.	-0.0002	0.6734	0.2836	2.1042	0.2498	0.3956	0.0022	0.2422
51.	0.1341	0.3977	0.3188	1.3963	0.1660	0.4964	0.1500	0.1997
52.	-0.1521	0.3667	0.1293	2.9903	0.0364	0.1538	0.2909	0.3341
53.	0.0346	0.5495	0.1123	2.4772	0.3028	0.1556	0.1606	0.0123
54.	0.1613	0.1111	0.1820	3.5278	0.2200	0.2394	0.0802	0.0185
55.	0.008	0.1764	0.1364	2.8606	0.2604	0.0655	0.2184	0.1901
56.	0.0995	0.2657	0.1595	2.0887	0.0834	0.1323	0.3051	0.7023
57.	0.035	0.0289	0.0802	2.2298	0.4272	0.3634	0.1747	0.2200
58.	0.0562	0.1278	0.2158	1.3313	0.1548	0.0950	0.0957	0.2604
59.	-0.0404	0.1884	0.2812	0.0087	0.4111	-0.1266	0.1994	0.0834
60.	0.1091	0.2488	0.2853	0.9997	0.0762	0.0291	0.1216	0.4272

Appendix E: Capital Turnover

	NG- GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	0.8300	0.5295	1.4739	2.4708	2.5537	2.1521	0.6630	1.4906
2.	1.8800	1.0342	2.1921	4.4963	4.7593	4.7430	1.1202	0.6340
3.	3.9000	1.5309	0.7264	1.7944	1.8690	1.8427	2.1404	4.0821
4.	2.3000	0.3404	0.8759	2.0259	1.9452	1.7729	1.5259	3.8940
5.	3.8700	3.3630	5.0089	6.5258	1.6762	1.6559	0.0970	1.4201
6.	1.4100	1.2695	0.9416	1.3823	1.4562	1.6372	3.7413	0.6713
7.	1.3300	2.4708	2.3924	2.2262	2.3800	2.3922	0.4589	0.7688
8.	2.3400	4.4963	1.8800	2.7288	2.7387	2.8975	1.9561	1.5729
9.	3.7700	1.7944	0.6609	7.7338	7.5424	5.9430	0.8417	1.1246
10.	3.6100	2.0259	1.3210	0.5941	0.2426	1.4221	0.6466	1.27
11.	2.5900	6.5258	1.8421	1.2446	1.0408	1.3751	1.8976	1.4925
12.	3.5900	1.3823	2.1671	1.3618	1.3698	2.7761	0.3423	1.4779
13.	3.0400	2.2262	1.2149	3.2345	3.2458	0.3787	1.0120	2.1619
14.	4.5200	2.7288	0.6446	0.5184	0.3820	0.7320	0.3213	1.5416
15.	2.1000	7.7338	2.5106	3.8940	1.4003	4.3517	1.1212	1.5504
16.	3.0000	0.5941	2.7283	0.8924	0.8863	0.3787	0.1169	1.2063
17.	1.5100	1.2446	1.6213	4.9931	4.2972	3.1632	0.097	1.972
18.	1.1200	1.3618	1.4739	0.8826	0.3820	1.0506	1.2141	1.4257
19.	3.2500	3.2345	2.1921	1.9169	1.9922	0.6414	0.0459	2.1042
20.	1.2300	0.5184	0.7264	1.7540	1.6740	1.7228	0.6828	1.3963
21.	3.2800	3.8940	0.8759	0.7609	0.6849	2.0593	0.8757	2.9903
22.	3.2800	0.8924	5.0089	1.4011	1.3923	1.2428	0.764	2.4772
23.	1.3800	4.9931	0.9416	1.7397	2.1130	1.6742	2.0232	3.5278
24.	2.4700	0.8826	2.3924	1.7480	1.3395	1.2193	1.4348	2.8606
25.	1.2300	1.9169	1.8800	-1.1094	-1.0052	4.5359	0.8324	2.0887
26.	1.0500	1.7540	0.6609	1.3101	1.6618	2.2484	1.5755	2.2298
27.	3.5300	0.7609	1.3210	3.7554	4.3191	1.8405	1.4556	1.3313
28.	1.7100	1.4011	3.0900	2.9020	2.4844	2.1521	0.9374	0.0087
29.	1.5400	1.7397	2.4984	3.6183	3.2849	4.7430	1.0037	0.9997
30.	3.4300	1.7480	5.6205	0.8960	0.9140	1.8427	1.0806	1.4906
31.	0.7091	-1.1094	0.9031	1.4906	1.5946	1.7729	2.3211	0.6340
32.	1.1120	1.3101	1.4739	0.6340	1.9140	1.6559	0.861	4.0821
33.	1.8196	3.7554	2.1921	4.0821	3.2061	1.6372	1.479	3.8940
34.	0.3634	2.9020	0.7264	3.8940	0.4820	2.3922	2.0042	1.4201
35.	3.5430	3.6183	0.8759	1.4201	1.4023	2.8975	2.0021	0.6713
36.	1.2790	0.8960	5.0089	0.6713	2.5537	5.9430	0.7319	0.7688
37.	4.2972	1.4906	0.9416	0.7688	4.7593	1.4221	0.658	1.5729
38.	0.3820	0.6340	2.3924	1.5729	1.8690	1.3751	1.0237	1.1246
39.	1.9922	4.0821	1.8800	1.1246	1.9452	2.7761	0.4734	1.27
40.	1.6740	3.8940	3.0900	1.27	1.6762	0.3787	1.7011	1.4925
41.	0.6849	0.5295	2.4984	1.4925	1.4562	0.7320	1.0919	1.4779
42.	1.3923	1.0342	5.6205	2.4708	2.3800	4.3517	2.3999	2.1619

Appendix E: Capital Turnover *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
43.	3.2849	0.7091	2.0902	-1.1094	0.7609	1.4221	1.1202	1.1246
44.	0.9140	1.1120	4.0561	1.3101	1.4011	1.3751	2.1404	1.27
45.	1.5946	1.8196	1.9750	3.7554	1.7397	2.7761	1.5259	1.4925
46.	1.3751	0.3634	2.2929	2.9020	1.7480	0.3787	0.0970	1.4779
47.	2.7761	3.5430	7.5572	3.6183	-1.1094	0.7320	3.7413	2.1619
48.	0.3787	1.2790	1.8012	0.8960	1.3101	4.3517	0.4589	1.5416
49.	0.7320	4.2972	3.0900	1.4906	3.7554	0.3787	1.9561	1.5504
50.	4.3517	0.3820	2.4984	0.6340	2.9020	3.1632	0.8417	1.2063
51.	0.3787	1.9922	5.6205	4.0821	3.6183	1.0506	0.6466	1.972
52.	3.1632	1.6740	0.9031	3.8940	0.8960	0.6414	1.8976	1.4257
53.	1.0506	0.6849	1.4739	1.4201	1.4906	1.7228	0.3423	2.1042
54.	0.6414	1.3923	2.1921	0.6713	0.6340	2.0593	1.0120	1.3963
55.	1.7228	2.1130	0.7264	0.7688	4.0821	1.2428	0.3213	2.9903
56.	2.0593	1.3395	0.8759	1.5729	3.8940	1.6742	1.1212	2.4772
57.	1.2428	-1.0052	5.0089	1.1246	1.4201	1.2193	0.1169	3.5278
58.	1.6742	1.6618	0.9416	1.27	0.6713	4.5359	0.097	2.8606
59.	1.2193	4.3191	2.3924	1.4925	0.7688	2.2484	1.2141	2.0887
60.	4.5359	2.4844	1.8800	1.4779	1.5729	1.8405	0.0459	2.2298

Appendix E: Current Ratio

	NG- GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	0.4047	2.8321	1.1553	2.0232	1.8588	1.7729	0.6023	1.4320
2.	1.0832	0.7803	1.6449	0.8610	0.8536	1.6559	1.2001	0.4520
3.	1.1207	0.8964	1.1554	0.9880	0.8950	1.6372	1.8204	1.8342
4.	0.6780	0.7499	3.5332	0.9648	0.6367	2.3922	0.6920	2.9950
5.	2.0050	1.9579	1.2770	1.4365	1.4262	2.8975	2.0864	0.4867
6.	1.8682	2.2243	2.4520	0.8423	0.8679	5.9430	1.9083	1.8902
7.	2.0232	1.5410	0.8976	1.7246	1.5722	1.4221	0.0838	4.000
8.	0.8610	1.8864	2.2300	1.7011	1.6953	1.3751	0.0681	2.1801
9.	0.9880	1.8197	1.2144	1.5755	1.5755	2.7761	0.6367	1.7455
10.	0.9648	1.1272	1.3096	0.8303	1.1781	0.3787	0.3007	5.026
11.	1.4365	0.7000	1.2397	0.8691	0.2566	0.7320	0.5057	0.1192
12.	0.8423	1.4664	1.8841	1.8821	1.8571	4.3517	0.6346	4.7456
13.	1.7246	1.9270	1.5945	0.6827	0.5057	0.3787	0.768	8.4507
14.	1.7011	0.8772	1.6132	0.7678	1.4525	3.1632	1.8588	5.6135
15.	1.5755	0.4568	0.3054	0.3213	0.2946	1.0506	1.2316	5.242
16.	0.8303	3.5054	1.8155	2.4000	2.4401	0.6414	0.8679	5.7966
17.	0.8691	1.4660	1.0578	1.0590	1.1209	1.7228	1.5755	8.626
18.	1.8821	-3.0424	0.3043	1.4790	1.4525	2.0593	1.4581	3.4026
19.	0.6827	0.6029	2.1685	1.8442	1.8231	1.2428	0.895	0.1152
20.	0.7678	1.9882	1.0729	1.0652	1.0631	1.6742	1.4262	6.5107
21.	0.3213	0.8041	1.2128	0.6630	1.0327	1.2193	1.0611	2.4962
22.	2.4000	1.1297	2.3315	1.1202	1.1207	4.5359	2.3402	4.8495
23.	1.0590	1.5889	1.0953	2.1404	1.3761	2.2484	2.65	0.153
24.	1.4790	0.7689	0.9577	1.5259	1.6939	1.8405	1.4525	6.5084
25.	1.8442	0.6407	1.1553	0.0970	0.0681	1.7729	1.8821	0.9556
26.	1.0652	0.4935	1.6449	3.7413	0.3204	1.6559	2.0773	5.2446
27.	0.6630	0.8758	1.1554	0.4589	0.3008	1.7583	0.5753	0.8378
28.	1.1202	4.4838	3.5332	1.9561	2.0773	0.5562	0.8099	2.6129
29.	2.1404	0.7947	1.2770	0.8417	0.6088	1.9737	0.9023	0.9242
30.	1.5259	8.8566	2.4520	0.6466	0.7708	2.6393	0.2946	7.3288
31.	0.0970	1.0466	0.8976	1.8976	1.8880	1.1919	1.6953	1.6369
32.	3.7413	1.5108	1.2144	0.3423	0.8908	1.9737	3.1807	8.2722
33.	0.4589	2.6768	1.3096	1.0120	1.0100	1.2139	2.4401	2.498
34.	1.9561	0.7363	1.8012	0.3213	1.4022	1.4354	1.9454	1.4342
35.	0.8417	2.1762	3.0900	1.1212	1.1007	1.5426	1.2001	1.972
36.	0.6466	1.6244	2.4984	0.1169	1.8588	0.9251	1.8204	1.4257
37.	1.8976	2.0424	5.6205	0.097	0.8536	2.0641	0.6920	2.1042
38.	0.3423	2.8321	0.9031	1.2141	0.8950	1.8233	2.0864	1.3963
39.	1.0120	0.7803	1.4739	0.0459	0.6367	1.4867	1.9083	2.9903
40.	0.3213	0.8964	2.1921	0.6828	1.4262	0.8429	1.7583	2.4772
41.	0.4047	0.7499	0.7264	2.0232	0.8679	1.4409	0.5562	3.5278
42.	1.0832	1.9579	0.8759	0.8610	1.5722	0.6549	0.6023	1.4320

Appendix E: Current ratio *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
43.	1.0312	2.0259	2.4188	0.8757	1.3823	1.9766	0.8611	1.4525
44.	1.3563	6.5258	0.9861	0.764	2.2262	0.6617	1.9880	1.8821
45.	0.8100	1.3823	1.0284	2.0232	2.7288	1.0467	1.3939	2.0773
46.	1.6503	2.2262	1.2144	1.4348	7.7338	0.6287	0.7971	0.5753
47.	1.0633	2.7288	1.3096	0.8324	0.5941	1.5447	1.2566	0.8099
48.	1.2921	7.7338	1.2397	1.5755	1.2446	0.7436	4.6484	0.9023
49.	1.1701	0.5941	1.8841	1.4556	1.3618	1.3225	0.6411	0.2946
50.	1.3221	1.2446	1.5945	0.9374	3.2345	1.7928	3.0841	1.6953
51.	1.4564	1.3618	1.6132	1.0037	0.5184	1.6925	0.3987	3.1807
52.	1.2803	3.2345	0.3054	1.0806	3.8940	0.7383	0.8029	2.4401
53.	1.7112	0.5184	1.8155	2.3211	0.8924	1.7583	1.9443	1.9454
54.	0.8412	3.8940	1.0578	0.861	4.9931	0.5562	0.3597	1.2001
55.	1.7406	0.8924	0.3043	1.479	0.8826	1.9737	2.0725	1.8204
56.	1.10	4.9931	2.1685	2.0042	1.9169	2.6393	1.6059	0.6920
57.	1.4521	0.8826	1.0729	2.0021	1.7540	1.1919	1.0174	2.0864
58.	0.9488	1.9169	1.2128	0.7319	0.7609	1.9737	0.9395	1.9083
59.	1.4902	1.7540	2.3315	0.658	1.4011	1.2139	0.5825	1.7583
60.	1.0121	0.7609	1.0953	1.0237	1.7397	1.4354	0.7992	0.5562

Appendix E: Cash flow Ratio

		NG- GAAP				IFRS		
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	.0401	.1030	.0871	.2112	.2012	.0312	.0382	.0402
2.	.0302	.0904	.0826	.8755	.8642	.1042	.1112	.0618
3.	.0540	.0688	.0784	.3782	.3736	.0736	.0806	.0916
4.	.0660	.0860	.1621	.3405	.3206	.1205	.1275	.0846
5.	.0510	.0820	.1010	.4305	.4305	.2342	.2412	.0908
6.	.0640	.1023	.1734	.0905	.0905	.0915	.0985	.0868
7.	.0430	.1112	.0520	.0103	.0103	.0103	.0173	.0366
8.	.0390	.0755	.0992	.1578	.1566	.1226	.1296	.0204
9.	.0490	.0782	.0420	.5514	.5214	.0214	.0284	.0864
10.	.0200	.0605	.1022	-.0311	-.0311	-.3311	-.3241	-.4600
11.	.0140	.0305	.1052	.0190	.0190	.0150	.0220	.0316
12.	.0310	.0905	.0300	.1639	.1608	.1008	.1078	.0202
13.	.0501	.0103	.0209	.4345	.4545	.1045	.1115	.0610
14.	.0900	.0578	.0236	.2491	.2491	.1049	.1119	.0800
15.	.0500	.0514	.0321	.0599	.0602	.0802	.0872	.0888
16.	.0700	.0311	.0313	.3073	.3073	.1073	.1143	.0346
17.	.0210	.0190	.0650	.3449	.3449	.0449	.0519	.0506
18.	.1020	.1039	.0742	.3592	.3592	.0692	.0762	.0844
19.	.0900	.0345	.0603	.2251	.2251	.0251	.0321	.0464
20.	.0400	.0491	.0893	.2323	.2323	.1023	.1125	.0903
21.	.0340	.0599	.0988	.5350	.4350	.1035	.1192	.0282
22.	.0200	.0307	.1143	.1302	.1302	.1102	.0315	.0563
23.	.0206	.0345	.0903	.0025	.0025	.0225	.0346	.0224
24.	.0310	.0359	.0607	.3848	.3856	.0256	.0306	.0362
25.	.0120	.1025	.0931	.4064	.4164	.0216	.1154	.0325
26.	.0510	.0432	.0675	.1764	.1764	.1064	.1144	.1032
27.	.0410	.0535	.0804	.7966	.7054	.1054	.0593	.0588
28.	.0210	.1002	.0971	.6503	.4503	.0503	.0894	.0624
29.	.0402	.0425	.1026	.8447	.8042	.0804	.1128	.0402
30.	.0301	.0648	.0684	.1938	.1938	.1038	.0751	.0904
31.	.0401	.0406	.0821	.5613	.5613	.0661	.1070	.0643
32.	.0502	.1064	.1003	.1900	.1900	.0980	.1112	.0203
33.	.0430	.0797	.1034	.1442	.1442	.1022	.0720	.0764
34.	.0610	.0503	.0920	.0600	.0600	.0630	.1114	.0846
35.	.0120	.0447	.0892	.1322	.1322	.1024	.1020	.0288
36.	.0401	.0938	.0632	.1430	.1430	.0930	.0694	.0822
37.	.0301	.0561	.0322	.5604	.5604	.0604	.0978	.0942
38.	.0290	.0901	.1052	.4388	.4388	.0888	.1152	.1048
39.	.1100	.0442	.0901	.1860	.1860	.1062	.1112	.0453
40.	.0304	.0600	.0987	.1820	.1820	.1022	.1022	.0606
41.	.0401	.1030	.0871	.2112	.2012	.0623	.0382	.0402
42.	.0302	.0904	.0826	.8755	.8642	.0911	.1112	.0618

Appendix E: Cash flow ratio *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
43.	.0411	.0800	.1136	.1023	.1023	.0555	.0673	.0883
44.	.0420	.0974	.0221	.2112	.2112	.0720	.0961	.0306
45.	.0250	.0758	.1213	.8755	.8755	.0425	.0605	.0306
46.	.0210	.0490	.1050	.3782	.3782	.0302	.0770	.0522
47.	.0330	.1090	.1202	.3405	.3405	.0105	.0475	.0405
48.	.0700	.1039	.1063	.4305	.4305	.0251	.0352	.0304
49.	.0220	.0948	.0793	.0905	.0905	.0304	.0155	.0200
50.	.0300	.0425	.0888	.5514	.5514	.0182	.0301	.0308
51.	.0820	.1115	.0443	.0311	.0311	.1036	.0354	.0304
52.	.0610	.0978	.0803	.0190	.0190	.0435	.0232	.0208
53.	.0523	.1068	.0511	.1639	.1639	.0249	.1086	.0908
54.	.0330	.0575	.0553	.4345	.4345	.0566	.0485	.0460
55.	.0200	.0473	.0565	.2491	.2491	.0307	.0299	.0345
56.	.0171	.0948	.1104	.0599	.0599	.0345	.0616	.0604
57.	.0220	.0914	.0993	.3073	.3073	.0492	.0357	.0353
58.	.0200	.0459	.0488	.3449	.3449	.0223	.0395	.0344
59.	.0170	.0560	.0324	.3592	.3592	.0463	.0542	.0326
60.	.0210	.1001	.1003	.2251	.2251	.0538	.0273	.0302

Appendix E: Working capital Ratio

	NG- GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	.1067	.1122	.1343	.6171	.3171	.0517	.0647	.0808
2.	.1304	.1045	.1173	.9156	.5156	.1113	.1243	.1042
3.	.0945	.1065	.2137	.4049	.4049	.0949	.1079	.1060
4.	.1152	.1042	.1453	.4220	.4220	.1305	.1435	.0985
5.	.1043	.1021	.2988	.5738	.4738	.2798	.2928	.2024
6.	.1138	.1337	.2315	.1060	.1060	.1081	.1211	.1202
7.	.0931	.1271	.3091	.0212	.0212	.0289	.0419	.0643
8.	.0635	.1056	.3726	.1653	.1653	.1303	.1433	.1162
9.	.0980	.1149	.3126	.6795	.4795	.0795	.0925	.0908
10.	.0824	.1220	.2649	-.1024	-.1024	-.1024	-.0894	-.1804
11.	.0353	.1138	.2112	.0353	.0353	.0343	.0473	.1023
12.	.0484	.1602	.0419	.3842	.3842	.2802	.2932	.1032
13.	.1004	.0312	.3694	.4386	.4386	.1386	.1516	.1062
14.	.1263	.1153	.3136	.3629	.3629	.1629	.1759	.1204
15.	.0913	.1095	.1486	1.9126	.2126	.1013	.1143	.1100
16.	.1058	.0924	.0806	.3581	.3581	.1584	.1714	.1041
17.	.0991	.0353	.4253	.4291	.4291	.0889	.1019	.0864
18.	.2191	.1184	.1246	.4191	.4191	.0982	.1112	.0936
19.	.2925	.0939	.1119	.3925	.3925	.0823	.0953	.1033
20.	.1590	.0629	.2839	.5159	.3159	.1188	.1318	.1044
21.	.0901	.0913	.2400	.6201	.5201	.1261	.1371	.1162
22.	.0637	.0658	.2509	.2637	.2637	.1200	.1310	.0988
23.	.0947	.0891	.2118	.1095	.1095	.0709	.0819	.1022
24.	.0861	.0819	.1920	.4610	.4610	.0462	.0572	.1028
25.	.0471	.1293	.2293	.5471	.5471	.0548	.0658	.0955
26.	.1649	.0959	.1675	.3649	.3649	.1109	.1219	.1282
27.	.0852	.0901	.2342	.8852	.5852	.1163	.1273	.2066
28.	.0861	.1237	.1273	.8605	.4605	.0961	.1071	.1064
29.	.0714	.0895	.2243	.9714	.6714	.1001	.1111	.0988
30.	.0920	.0961	.2067	.2039	.2039	.1103	.1213	.1264
31.	.0908	.0947	.2383	.6908	.6908	.0992	.1102	.1036
32.	.1011	.1165	.2918	.2011	.2011	.1002	.1112	.0864
33.	.1012	.1085	.2245	.1512	.1512	.1104	.1214	.1244
34.	.1260	.0961	.2021	.1126	.1126	.0986	.1096	.1036
35.	.0637	.0714	.1656	.1637	.1637	.1144	.1254	.0964
36.	.0837	.1139	.2056	.5837	.5837	.1204	.1314	.1338
37.	.0967	.0908	.1719	.6237	.6237	.0982	.1092	.1182
38.	.0651	.1011	.3042	.5651	.5651	.1102	.1212	.1230
39.	.3420	.1012	.1349	.2420	.2420	.1101	.1211	.0998
40.	.0620	.1126	.1640	.2021	.2021	.1199	.1309	.1005
41.	.0835	.1073	.2066	.1337	.1337	.1107	.1217	.1282
42.	.1007	.1126	.1416	.6171	.6171	.1271	.1381	.0886

Appendix E: Working capital ratio *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
43.	.0504	.1054	.2736	.9156	.9156	.1260	.1350	.0924
44.	.0815	.0731	.2183	.4149	.4149	.2009	.2099	.1032
45.	.0955	.1291	.2176	.4220	.4220	.1130	.1220	.1064
46.	.1143	.1223	.2189	.7738	.7738	.0971	.1061	.0946
47.	.0638	.1061	.1769	.1600	.1600	.1680	.1770	.0818
48.	.0431	.0734	.1330	.6312	.6312	.1302	.1392	.0964
49.	.1035	.1284	.1439	.1353	.1353	.0935	.1025	.1001
50.	.1180	.1167	.1048	.1842	.1842	.1122	.1212	.9364
51.	.0924	.1280	.1850	.4386	.4386	.2305	.2395	.1122
52.	.0667	.1029	.2223	.4629	.4629	.2608	.2698	.1036
53.	.0960	.0820	.1745	.3126	.3126	.0918	.1008	.0964
54.	.0255	.1024	.1272	.3581	.3581	.2500	.2590	.1102
55.	.0652	.1269	.1206	.4291	.4291	.0981	.1071	.0983
56.	.0557	.0866	.2556	.4191	.4191	.0884	.0974	.1022
57.	.0562	.0954	.1876	.4925	.4925	.3001	.3091	.1036
58.	.0912	.1173	.2323	.3159	.3159	.1096	.1186	.0884
59.	.0953	.0896	.1316	.5201	.5201	.1280	.1370	.1044
60.	.0995	.0926	.1049	.6637	.6637	.2009	.2099	.0986

Appendix E: Cash flow/total debt Ratio

			NG- GAAP			IFRS		
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	.0322	.0882	.0557	.3074	.3074	.2094	.2134	.0210
2.	.0212	.0399	.0113	.5631	.4631	.3624	.3664	.0366
3.	.0581	.0801	.1377	.3951	.2951	.0961	.1001	.0802
4.	.0486	.0305	.1764	.3413	.3413	.1014	.1054	.1052
5.	.0210	.0113	.0691	.2429	.2429	.1140	.1180	.1082
6.	.0360	.0461	.1487	.0682	.0682	.0882	.0922	.0908
7.	.0400	.0207	.0733	.0094	.0094	.0194	.0234	.0482
8.	.0406	.0463	.1370	.2541	.2541	.2541	.2581	.0658
9.	.0579	.0395	.1066	-.4526	.2526	.1506	.1546	.1062
10.	.0171	.0341	.0495	-.0293	-.0293	-.2293	-.2253	-.2003
11.	.0297	.0243	.1337	.0318	.0318	.1118	.1158	.0886
12.	.0568	.0682	.1744	.1639	.1639	.1639	.1679	.1044
13.	.0861	.0094	.1169	.2246	.2246	.0284	.0324	.0640
14.	.0283	.0541	.0487	.1264	.1264	.1063	.1103	.8202
15.	.0214	.1526	.0149	-.2415	-.2415	-.2415	-.2375	-.3604
16.	.0861	.0593	.1230	.6507	.2507	.0582	.0622	.0440
17.	.0437	.0618	.0228	.1521	.1521	.1024	.1064	.0864
18.	.0990	.0339	.1097	.5522	.3522	.0502	.0542	.0848
19.	.0618	.0246	.1536	.2664	.2664	.1064	.1104	.1002
20.	.0609	.0637	.1447	.3046	.3046	.1046	.1086	.0992
21.	.0567	.2042	.1566	.7256	.4256	.0256	.0296	.0366
22.	.0397	.0507	.0593	.2088	.2088	.1098	.1138	.1042
23.	.0650	.0221	.1535	-.0057	.0057	.0157	.0217	.0482
24.	.0761	.0222	.0875	.4473	.3473	.0473	.0533	.0436
25.	.0820	.0366	.0839	-.0721	.0721	.0781	.0841	.0830
26.	.0349	.0305	.0610	.3366	.3366	.1166	.1226	.1032
27.	.0679	.0256	.1150	.1822	.1822	.1024	.1084	.0623
28.	.0345	.0209	.0216	.6335	.3335	.1135	.1195	.0682
29.	.0473	.0257	.0651	.4457	.4457	.1057	.1117	.1002
30.	.0260	.0447	.0378	.1852	.1852	.0952	.1012	.0240
31.	.0588	.0121	.0416	.8559	.3559	.0669	.0729	.0802
32.	.0454	.0366	.1091	.1302	.1302	.1002	.1062	.0640
33.	.0582	.0222	.1887	.1461	.1461	.0361	.0421	.0444
34.	.0832	.0434	.1133	.2620	.2620	.2810	.2870	.1004
35.	.0745	.0446	.0770	.1082	.1082	.1082	.1142	.1020
36.	.0557	.0652	.0466	.5882	.3882	.0288	.0348	.0282
37.	.0614	.0559	.0195	.2099	.2099	.1124	.1184	.1001
38.	.0654	.0302	.0737	.2801	.2801	.2661	.2721	.1022
39.	.0355	.0461	.0144	-.2305	.2305	.2305	.2365	.1000
40.	.0463	.0620	.1569	.2013	.2013	.2013	.2073	.1032
41.	.0428	.0652	.1887	.2461	.2461	.2062	.2122	.1066
42.	.0106	.0313	.0549	.3074	.3074	.2084	.2144	.0982

Appendix E: Cash flow/total debt ratio *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
43.	.0479	.0242	.1630	.5631	.5631	.4006	.4086	.1102
44.	.0471	.0535	.0628	.3951	.3951	.3052	.3132	.1000
45.	.0497	.0322	.0497	.3413	.3413	.2303	.2383	.1200
46.	.0268	.0277	.0936	.2429	.2429	.2024	.2104	.1082
47.	.0261	.0216	.1847	.0682	.0682	.0608	.0688	.0864
48.	.0283	.0401	.1966	.0094	.0094	.0194	.0274	.0602
49.	.0244	.1028	.0993	.2541	.2541	.2040	.2120	.0886
50.	.0661	.0182	.1935	-.4526	.4526	.2106	.2186	.0886
51.	.0537	.0280	.1275	-.0293	.0293	.0293	.0373	.0486
52.	.0399	.0455	.0790	.0318	.0318	.0326	.0406	.0634
53.	.0281	.0514	.0496	.5522	.5522	.0821	.0901	.0988
54.	.0609	.0269	.0550	.2664	.2664	.2844	.2924	.1000
55.	.0267	.0476	.1830	-2.3046	.3046	.3246	.3326	.1022
56.	.0597	.0352	.0828	.7256	.7256	.2206	.2286	.1202
57.	.0250	.0491	.0697	.2088	.2088	.2023	.2103	.0998
58.	.0561	.0359	.1136	-.0057	.0057	.0165	.0245	.0463
59.	.0320	.1984	.1047	.4473	.4473	.0883	.0963	.0900
60.	.0349	.0593	.0166	-.0721	.0721	.0631	.0711	.0820

Appendix E: Gearing Ratio

	NG- GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	.6600	.6523	.5527	.0916	.0916	.2016	.1726	.6226
2.	.3000	.1644	.0676	.0140	.0140	.3400	.3110	.4810
3.	.4200	.2016	1.7421	.5747	.5747	.6002	.5712	.6012
4.	.7000	.4518	.3812	.5746	.5746	.4806	.4516	.6210
5.	.8400	.5305	.6701	.3412	.3412	.4012	.3722	.9022
6.	.6400	.6248	.2921	.4286	.4286	.8406	.8116	.8006
7.	.8321	.0916	1.0141	.5145	.5145	.5045	.4755	.4966
8.	.9200	.0140	.5567	.2301	.2301	.0301	.0011	.4006
9.	.6000	.5747	1.3519	.2545	.2545	.2045	.1755	.3602
10.	.5430	.5746	1.2599	.8317	.8317	.8618	.8328	.8022
11.	.3290	.3440	1.0073	.4821	.4821	.4801	.4511	.4500
12.	.4420	.4286	1.1261	.0165	.0165	.2065	.1775	.6075
13.	.3200	.5145	.5634	.6042	.6042	.6042	.5752	.5062
14.	.2000	.6620	.2988	.8866	.8866	.8066	.7776	.8046
15.	.4020	.2545	1.1025	1.1361	1.1361	.6461	.6171	.6084
16.	.3060	.8317	1.2646	.2764	.2764	.3664	.3374	.4060
17.	.6320	.4821	.8619	.0684	.0684	.3684	.3394	.6604
18.	.6440	.0165	.7992	.2386	.2386	.2386	.2096	.4500
19.	.8300	.6042	.4645	.3498	.3498	.3408	.3118	.4050
20.	.6220	.8866	.0782	.0839	.0839	.2439	.2149	.8804
21.	.5400	1.1361	.4530	.3974	.3974	.3974	.3684	.4602
22.	.4000	.2764	.2204	.0966	.0966	.3066	.2776	.6600
23.	.6000	.0684	.8079	.1120	.1120	.4020	.4430	.4830
24.	.6400	.2386	.8957	.1769	.1769	.9069	.9479	.9000
25.	.8800	.3498	.1421	.7426	.7426	.8026	.8436	.8036
26.	.5000	.0839	.3854	.5375	.5375	.9237	.9647	.9002
27.	.6000	.3974	.1071	2.8053	.8053	.8053	.8463	.8064
28.	.7000	.0966	.0727	.1290	.1290	.2090	.2500	.3600
29.	.9000	.0000	.0200	.6474	.6474	.6406	.6816	.6840
30.	.3500	.1769	1.7621	1.2011	.2011	.6401	.6811	.6044
31.	.7900	.7426	.4012	.1224	.1224	.3022	.3432	.5200
32.	.6100	.5375	.0200	1.1000	.1000	.3400	.3810	.4008
33.	.4000	.8053	.1121	.0244	.0244	.6044	.6454	.4000
34.	.2000	.1290	1.0341	1.0244	1.0244	.2844	.3254	.6002
35.	.1800	.6474	.0200	.0864	.0864	.1064	.1474	.6682
36.	.3200	1.2011	.3719	.0679	.0679	.2071	.2481	.6000
37.	.2500	.1224	.2799	1.7120	1.7120	.7020	.7430	.7201
38.	.4200	1.1000	.0273	.2760	.2760	.3662	.4072	.4044
39.	.3300	.0244	.1461	.3069	.3069	.3606	.4016	.4036
40.	.6000	1.0244	.0200	.5074	.5074	.5004	.5414	.5462
41.	.6400	.9123	.3188	.4617	.4617	.4012	.4422	.8066
42.	.4400	.4244	.1225	.2713	.2713	.6413	.6823	.5200

Appendix E: Gearing ratio *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
43.	.3000	.4616	.2846	.0983	.0983	.6082	.6492	.6240
44.	.1600	.7118	.0819	.6341	.6341	.8441	.8251	.8200
45.	.2400	.7905	.0200	.3364	.3364	.4864	.4674	.5002
46.	.2400	.8848	.4845	.2141	.2141	.4441	.4251	.8044
47.	.4000	.3516	.0982	.6138	.6138	.6430	.6240	.8036
48.	.5200	.2640	.0200	.0496	.0496	.3096	.2906	.6404
49.	.3000	.8347	.2404	.1550	.1550	.6250	.6060	.6066
50.	.3400	.8346	.8279	.2308	.2308	.8808	.8618	.8000
51.	.2300	.2600	.9157	.1093	.1093	.4090	.3900	.4000
52.	.2000	.6886	.1621	.6367	.6367	.6400	.6210	.6000
53.	.2300	.7745	.4054	.2249	.2249	.8601	.8411	.8201
54.	.3300	.2600	.1271	.0947	.0947	.6040	.5850	.9200
55.	.4200	.5145	.2788	.2088	.2088	.9002	.8812	.8866
56.	.1800	1.0917	.0825	.2860	.2860	.9264	.9074	.9002
57.	.3600	.7421	.2446	.1942	.1942	.8042	.7852	.7066
58.	.3400	.2765	.0419	.1212	.1212	.6212	.6022	.6360
59.	.6000	.8642	.0200	.3218	.3218	.4018	.3828	.4088
60.	.5600	1.1466	.4445	.1273	.1273	.8801	.8611	.8000

Appendix E: Debt/Equity Ratio

			NG- GAAP			IFRS		
S/N	2008	2009	2010	2011	2011	2012	2013	2014
1.	3.6713	2.9132	1.5233	.7499	1.7499	1.7880	1.8370	2.8370
2.	2.7688	1.3358	1.7270	1.9579	1.9579	2.0082	2.0572	2.8200
3.	2.5729	1.9461	3.0572	2.2243	2.2243	2.0282	2.0772	2.1820
4.	1.1246	2.8321	1.2882	1.5410	2.5410	2.6200	2.6690	2.4462
5.	3.2700	2.7803	2.3761	1.8864	1.8864	2.0062	2.0552	2.6640
6.	2.4925	2.8964	1.0855	1.8197	2.8197	2.8204	2.8694	2.8004
7.	1.4779	1.7499	2.7309	1.1272	1.1272	2.1002	2.1492	2.6288
8.	3.1619	.9579	2.7266	.7000	.7300	.8804	.9294	2.9080
9.	1.5416	2.2243	2.6624	1.4664	1.4664	1.6408	1.6898	1.8864
10.	1.5504	2.5410	2.9667	1.9270	2.9270	2.8640	2.9130	2.8056
11.	1.2063	2.8864	2.5334	1.8772	1.8772	1.8840	1.9330	2.9982
12.	1.9720	3.8197	2.9721	.4568	.4568	1.0044	1.0534	2.3608
13.	1.4257	2.1272	1.2025	2.5054	2.5054	2.6240	2.6730	2.8834
14.	2.1042	2.7000	1.6474	1.4660	2.4660	2.6330	2.6820	2.8804
15.	1.3963	2.4664	2.0451	3.0424	2.0424	2.6020	2.6510	2.8208
16.	2.9903	3.9270	2.7419	1.6029	1.6029	1.8642	1.9132	2.9002
17.	2.4772	2.8772	1.6307	1.9882	1.9882	2.9056	2.9546	2.9060
18.	3.5278	.9568	1.1212	.8041	.8041	1.1084	1.1574	2.0604
19.	2.8606	2.5054	1.8736	1.1297	1.1297	1.0882	1.1372	2.0004
20.	2.0887	2.4660	2.6285	1.5889	1.5889	1.8006	1.8496	2.8000
21.	2.2298	3.0424	1.5488	1.7689	1.7689	2.0842	2.1312	2.0002
22.	1.3313	1.6029	1.1087	.6407	.6407	1.1208	1.1678	2.0836
23.	2.0087	1.9882	1.1165	1.4935	1.4935	1.6042	1.6512	2.6002
24.	2.9997	1.8041	2.1900	2.8758	2.8758	2.8065	2.8535	2.8002
25.	3.1773	2.1290	1.9539	1.4838	1.4838	2.4642	2.5112	2.5002
26.	1.2305	1.5889	1.2799	2.7947	2.7947	2.8820	2.9290	2.6204
27.	2.6920	2.7689	2.5878	2.8566	2.8566	2.8686	2.9156	3.9066
28.	1.2715	1.6407	1.6033	1.0466	1.0466	1.1052	1.1522	2.1042
29.	3.6360	2.4935	1.8070	1.5108	1.5108	1.5648	1.6118	1.6008
30.	1.6130	2.8758	3.1372	2.6768	2.6768	2.4508	2.4978	2.0440
31.	1.7755	3.4838	1.3682	1.7363	1.7363	1.7844	1.8314	1.8032
32.	1.1129	2.7947	1.4561	2.1762	2.1762	2.8224	2.8694	2.8004
33.	1.2382	2.8566	1.1655	1.6244	1.6244	1.9204	1.9674	1.8023
34.	1.5644	1.0466	2.8109	2.0424	2.0424	2.2234	2.2704	2.6004
35.	1.5735	2.5108	1.8066	.8427	.8427	1.8406	1.8876	1.6648
36.	2.3335	3.6768	1.7424	.8288	.8288	1.8202	1.8672	1.0002
37.	1.5470	2.7363	2.0467	2.4574	2.4574	2.4574	2.5044	2.5604
38.	1.5971	4.1762	1.6134	1.2895	1.2895	1.3000	1.3470	1.3000
39.	1.6819	1.6244	2.0521	2.7298	2.7298	2.7298	2.7768	2.8808
40.	1.9752	2.0424	1.2825	1.2883	1.2883	1.4603	1.5073	2.0014
41.	1.4395	2.7832	1.7274	1.7950	1.7950	1.8830	1.9280	2.9006
42.	3.8113	1.2058	2.1251	2.3396	2.3396	2.4438	2.4888	2.0225

Appendix E: Debt/Equity ratio *continue*

	NG-GAAP				IFRS			
S/N	2008	2009	2010	2011	2011	2012	2013	2014
43.	2.9088	2.8161	1.8219	1.8928	1.6029	1.8086	1.8536	1.8064
44.	1.7129	2.7021	1.7107	2.4463	1.9882	2.4082	2.4532	2.6436
45.	1.2646	2.6503	1.2012	1.6746	.8041	2.6041	2.6491	2.4440
46.	3.4100	3.7664	2.9536	1.5696	1.1297	2.6690	2.7140	2.7064
47.	2.6325	1.6199	1.7085	2.2817	1.5889	2.2440	2.2890	2.0360
48.	1.6179	1.8279	1.6288	1.0930	1.7689	1.2812	1.3262	2.0002
49.	4.3019	2.0943	1.1887	2.2785	.6407	2.2086	2.2536	2.1010
50.	1.6816	2.4110	2.1965	2.3226	1.4935	2.3006	2.3456	2.3022
51.	1.6904	1.7564	2.2700	1.3710	2.8758	1.3820	1.4270	1.4081
52.	1.3463	2.6897	1.0339	2.6229	1.4838	2.8444	2.8894	2.6604
53.	2.1120	3.9972	1.3599	2.8556	2.7947	2.8002	2.8452	2.8066
54.	1.5657	2.5700	1.6678	1.5554	2.8566	2.6224	2.6674	2.2244
55.	2.2442	2.3364	1.5833	2.2001	1.0466	2.2881	2.3331	2.6260
56.	1.5363	3.7970	1.7870	2.7776	1.5108	2.6246	2.6696	2.8246
57.	3.1303	2.7472	1.1172	1.4416	2.6768	2.0626	2.1076	2.2240
58.	2.6172	1.3268	1.3482	1.9128	1.7363	2.0000	2.0450	2.2820
59.	3.6678	2.3754	1.4361	1.1034	2.1762	1.6304	1.6754	1.8824
60.	3.0006	3.3360	1.1455	2.8459	1.6244	2.8006	2.8456	2.6044

Appendix E: Earning per share & Net Assets Per share

	2011 NG-GAAP EPS	2011 IFRS EPS	2011 NG-GAAP NAPS	2011 IFRS NAPS
1.	.00	.00	5.76	6.07
2.	100.00	-135.	4.27	8.52
3.	825.00	964.	97.07	98.06
4.	.00	-103.	69.52	71.87
5.	1.00	3.0	16.70	34.20
6.	508.00	503.00	6.18	6.04
7.	14.00	12.00	73.89	95.37
8.	59.00	62.00	1.79	1.79
9.	3.00	3.00	18.84	18.91
10.	34.00	34.00	5.09	3.83
11.	4.00	-12.00	2.33	2.33
12.	1.00	117.00	11.96	12.22
13.	21.00	101.00	69.20	75.69
14.	68.00	101.00	50.83	29.12
15.	1.00	1.00	2.39	3.66
16.	1.00	1.00	32.35	36.05
17.	1.00	2.00	12.50	12.35
18.	2.00	1.00	17.26	29.12
19.	1.00	1.00	5.37	5.72
20.	8.00	7.00	12.25	14.08
21.	.00	-17.00	25.74	33.83
22.	1.00	1.00	4.31	4.66
23.	1.00	82.00	11.35	12.38
24.	.00	.00	10.45	12.72
25.	.00	12.00	2.12	7.73
26.	3.00	4.00	9.88	10.01
27.	.00	2.00	6.84	6.76
28.	0.59	69.20	5.22	5.48
29.	1.45	50.83	15.13	28.49
30.	21.21	2.39	7.38	8.40
31.	9.95	32.35	3.79	3.79
32.	1.39	12.50	5.24	6.25
33.	30.14	17.26	9.40	9.40
34.	3.81	5.37	8.68	8.68
35.	0.15	12.25	2.82	3.66
36.	0.03	25.74	5.76	6.07
37.	0.02	4.31	4.27	8.52
38.	0.25	11.35	97.07	98.06
39.	1.23	10.45	69.52	71.87
40.	3.23	2.12	16.70	34.20
41.	2.84	9.88	6.18	6.04

Appendix E: Debt/Equity ratio *continue*

	2011 NG-GAAP EPS	2011 IFRS EPS	2011 NG-GAAP NAPS	2011 IFRS NAPS
42.	69.20	0.62	21.21	9.64
43.	50.83	1.46	9.95	1.01
44.	2.39	20.81	1.39	33.97
45.	32.35	9.64	30.14	3.51
46.	12.50	1.01	3.81	0.15
47.	17.26	33.97	0.15	0.03
48.	5.37	3.51	0.03	-0.26
49.	12.25	0.15	0.02	0.25
50.	25.74	0.03	0.25	1.05
51.	4.31	-0.26	1.23	2.62
52.	11.35	0.25	3.23	1.29
53.	10.45	1.05	2.84	-0.82
54.	2.12	2.62	-0.71	3.55
55.	9.88	1.29	3.09	0.69
56.	6.84	-0.82	0.67	1.29
57.	5.22	3.55	1.60	0.48
58.	15.13	0.69	0.39	5.27

Appendix F: Stock Price Information

Stock Price: P0 = stock price beginning 9 month before fiscal year end; P1 = stock price 3 months after fiscal year end; P2= stock price 6 months after fiscal year end.

	NG- GAAP			IFRS		
S/N	P0	P1	P2	P0	P1	P2
1.	15.67	12.50	12.87	10.80	9.90	9.49
2.	24.50	24.30	27.00	60.61	45.15	54.00
3.	359.10	425.50	400.00	990.03	1050.00	1150.00
4.	170.00	245.00	170.00	255.00	200.00	170.00
5.	4.93	4.34	2.31	2.99	4.00	3.46
6.	57.10	95.00	65.45	83.00	78.00	39.39
7.	2.50	2.18	1.36	1.90	1.83	1.36
8.	30.79	26.36	26.36	23.80	19.75	18.05
9.	8.00	8.52	10.43	8.70	8.90	9.00
10.	38.00	39.10	47.50	99.00	109.50	111.00
11.	13.00	14.07	12.71	14.43	19.00	16.30
12.	5.87	5.06	3.06	3.66	3.90	4.00
13.	20.00	24.00	23.25	20.90	16.06	28.51
14.	2.86	2.55	5.11	5.60	4.10	5.48
15.	12.46	15.50	16.00	9.05	8.75	8.20
16.	120.00	124.00	129.99	190.00	241.93	240.00
17.	0.53	0.66	0.50	0.50	0.50	0.50
18.	33.00	30.00	30.00	40.50	36.00	31.92
19.	25.37	23.13	17.95	45.50	78.55	80.00
20.	13.00	11.35	9.75	9.09	9.75	11.21
21.	7.10	6.44	5.70	19.05	26.70	24.23
22.	31.76	38.00	34.12	37.00	40.62	40.00
23.	74.58	77.14	87.50	165.00	152.98	171.99
24.	5.50	5.25	5.25	12.21	12.21	11.00
25.	15.67	12.50	12.87	10.80	15.67	12.87
26.	9.49	12.50	27.00	170.00	24.50	27.00
27.	54.00	24.30	400.00	3.46	359.10	400.00
28.	1150.00	425.50	170.00	39.39	170.00	170.00
29.	170.00	245.00	2.31	1.36	4.93	2.31
30.	3.46	4.34	65.45	18.05	57.10	65.45
31.	39.39	95.00	1.36	9.00	2.50	1.36
32.	1.36	2.18	26.36	111.00	30.79	26.36
33.	18.05	26.36	10.43	16.30	8.00	10.43
34.	9.00	8.52	47.50	4.00	38.00	47.50
35.	111.00	39.10	12.71	28.51	13.00	12.71
36.	16.30	14.07	3.06	5.48	5.87	3.06
37.	4.00	5.06	23.25	8.20	20.00	23.25
38.	28.51	24.00	5.11	240.00	2.86	5.11
39.	5.48	2.55	16.00	0.50	12.46	16.00
40.	8.20	15.50	129.99	31.92	120.00	129.99
41.	12.21	12.21	11.00	16.82	0.53	0.50

Appendix F: Stock Price Information *Continue*

	NG-GAAP			IFRS		
S/N	P0	P1	P2	P0	P1	P2
42.	10.80	54.00	60.61	24.30	45.15	27.00
43.	60.61	1150.00	990.03	425.50	1050.00	400.00
44.	990.03	170.00	255.00	245.00	200.00	170.00
45.	255.00	3.46	2.99	4.34	4.00	2.31
46.	2.99	39.39	83.00	95.00	78.00	65.45
47.	83.00	1.36	1.90	2.18	1.83	1.36
48.	1.90	18.05	23.80	26.36	19.75	26.36
49.	23.80	9.00	8.70	8.52	8.90	10.43
50.	8.70	111.00	99.00	39.10	109.50	47.50
51.	99.00	16.30	14.43	14.07	19.00	12.71
52.	14.43	4.00	3.66	5.06	3.90	3.06
53.	3.66	28.51	20.90	24.00	16.06	23.25
54.	20.90	5.48	5.60	2.55	4.10	5.11
55.	5.60	8.20	9.05	15.50	8.75	16.00
56.	9.05	240.00	190.00	124.00	241.93	129.99
57.	190.00	0.50	0.50	0.66	0.50	0.50
58.	0.50	31.92	40.50	30.00	36.00	30.00
59.	40.50	80.00	45.50	23.13	78.55	17.95
60.	45.50	11.21	9.09	11.35	9.75	9.75

Appendix F: Data for value relevance test: NG-GAAP

S/N	2011 BVPS	2010 NIPS	2011 NIPS	2010 DIV0	2011 DIV1	2010 ΔNI/Pit-1	2011 ΔNI	2011 CF	2011 R
1.	3.29	0.59	0.94	1.00	0.60	-0.02	-0.37	-0.14	0.04
2.	1.28	1.45	2.21	2.14	1.10	-0.01	-0.34	0.41	0.22
3.	29.64	23.73	19.08	12.55	12.55	0.00	0.24	0.34	0.50
4.	27.36	9.95	12.16	8.95	9.54	0.00	-0.18	0.23	-0.09
5.	2.19	0.33	0.30	0.11	0.13	0.02	0.10	0.07	0.69
6.	34.27	3.81	5.37	1.82	1.61	-0.01	-0.29	0.01	-0.13
7.	0.97	0.15	0.16	0.00	0.00	-0.03	-0.06	0.10	-0.14
8.	7.64	0.03	2.56	0.09	0.14	-0.03	-0.99	-0.22	0.15
9.	7.94	1.23	2.00	0.50	0.70	-0.05	-0.39	0.11	0.04
10.	18.68	2.84	1.63	0.10	0.25	0.02	0.74	0.25	0.11
11.	22.35	3.09	2.95	0.36	0.38	0.00	0.05	0.59	-0.09
12.	3.94	0.67	0.82	0.30	0.30	-0.03	-0.18	0.10	0.22
13.	9.57	1.79	1.51	0.00	0.34	0.01	0.19	0.30	-0.05
14.	2.52	0.39	0.33	0.12	0.16	0.06	0.18	0.20	0.29
15.	5.21	0.16	0.75	0.28	0.54	-0.06	-0.79	-0.18	0.05
16.	19.18	8.10	6.80	2.00	2.25	0.00	0.19	0.32	0.25
17.	2.81	-0.17	-0.12	0.00	0.00	0.79	0.42	0.08	-0.06
18.	10.48	1.05	1.50	0.68	0.86	-0.01	-0.30	0.00	-0.08
19.	5.57	1.22	0.43	0.13	0.12	0.07	1.84	0.24	-0.13
20.	5.57	1.83	1.00	1.00	0.00	0.06	0.83	0.18	-0.09
21.	0.62	0.07	0.09	0.00	0.00	-0.03	-0.22	0.21	0.25
22.	2.60	1.80	3.15	2.20	1.80	-0.01	-0.43	0.41	0.05
23.	10.37	5.08	4.01	3.54	1.25	0.00	0.27	0.27	0.05
24.	2.18	0.81	0.62	0.50	0.50	0.06	0.31	0.46	-0.16
25.	3.29	0.59	0.94	1.00	0.60	-0.02	-0.37	-0.14	0.04
26.	4.88	1.13	0.99	0.50	0.60	0.0917	-0.12	-0.04	0.31
27.	1.98	1.28	0.64	1.40	1.40	0.0106	-0.50	0.22	0.56
28.	45.34	28.08	28.05	20.00	32.93	0.0283	0.00	0.16	0.40
29.	32.10	7.88	5.18	7.84	7.00	0.0203	-0.34	0.12	0.34
30.	2.59	0.34	0.42	0.15	0.16	0.1405	0.24	-0.05	0.07
31.	40.51	4.23	1.14	1.86	2.09	0.0137	-0.73	0.12	0.01
32.	0.79	0.17	0.24	0.07	0.12	0.1263	0.41	0.17	0.25
33.	8.31	1.34	-1.25	0.40	0.40	-0.0525	-1.93	-0.05	-0.45
34.	11.32	1.12	0.68	0.36	0.58	0.0782	-0.39	0.24	0.16
35.	31.41	6.36	3.22	0.82	1.12	0.0325	-0.49	0.13	0.36
36.	31.91	2.66	4.78	0.40	0.34	0.3313	0.80	0.24	0.65
37.	4.58	0.51	0.89	0.30	0.30	0.2432	0.75	-0.04	0.15
38.	22.89	1.17	2.04	0.45	0.42	0.0976	0.74	0.22	0.55
39.	2.30	0.14	0.37	0.00	0.00	0.0661	1.64	0.16	0.27
40.	2.81	0.90	0.83	0.00	0.00	0.0917	-0.08	0.12	-2.30
41.	74.94	12.36	10.93	3.00	7.00	0.0575	-0.12	-0.05	0.31
42.	2.20	0.05	0.01	0.00	0.00	0.0200	-0.80	0.12	0.56
43.	6.95	0.56	1.00	0.43	1.50	0.0247	0.79	0.17	0.40

Appendix F: Data for value relevance test *continue*

S/N	2011 BVPS	2010 NIPS	2011 NIPS	2010 DIV0	2011 DIV1	2010 ΔNI/Pit-1	2011 ΔNI	2011 CF	2011 R
44	32.10	7.88	5.18	7.84	7.00	0.0203	-0.34	0.12	0.34
45	2.59	0.34	0.42	0.15	0.16	0.1405	0.24	-0.05	0.07
46	40.51	4.23	1.14	1.86	2.09	0.0137	-0.73	0.12	0.01
47	0.79	0.17	0.24	0.07	0.12	0.1263	0.41	0.17	0.25
48	8.31	1.34	-1.25	0.40	0.40	-0.0525	-1.93	-0.05	-0.45
49	11.32	1.12	0.68	0.36	0.58	0.0782	-0.39	0.24	0.16
50	31.41	6.36	3.22	0.82	1.12	0.0325	-0.49	0.13	0.36
51	31.91	2.66	4.78	0.40	0.34	0.3313	0.80	0.24	0.65
52	4.58	0.51	0.89	0.30	0.30	0.2432	0.75	-0.04	0.15
53	34.27	3.81	5.37	1.82	1.61	-0.01	-0.29	0.01	-0.13
54	0.97	0.15	0.16	0.00	0.00	-0.03	-0.06	0.10	-0.14
55	7.64	0.03	2.56	0.09	0.14	-0.03	-0.99	-0.22	0.15
56	7.94	1.23	2.00	0.50	0.70	-0.05	-0.39	0.11	0.04
57	18.68	2.84	1.63	0.10	0.25	0.02	0.74	0.25	0.11
58	22.35	3.09	2.95	0.36	0.38	0.00	0.05	0.59	-0.09
59	3.94	0.67	0.82	0.30	0.30	-0.03	-0.18	0.10	0.22
60	34.27	3.81	5.37	1.82	1.61	-0.01	-0.29	0.01	-0.13

Appendix F: Data for value relevance test: IFRS

S/N	2011 BVPS	2010 NIPS	2011 NIPS	2010 DIV0	2011 DIV1	2010 ΔNI/Pit-1	2011 ΔNI	2011 CF	2011 R
1.	4.88	1.13	0.99	0.50	0.60	0.09	-0.12	0.10	-0.84
2.	1.98	1.28	0.64	1.40	1.40	0.01	-0.50	-0.04	-15.43
3.	45.34	28.08	28.05	20.00	32.93	0.03	0.00	0.22	60.00
4.	32.10	7.88	5.18	7.84	7.00	0.02	-0.34	0.16	-54.97
5.	2.59	0.34	0.42	0.15	0.16	0.14	0.24	0.12	1.05
6.	40.51	4.23	1.14	1.86	2.09	0.01	-0.73	-0.05	-4.97
7.	0.79	0.17	0.24	0.07	0.12	0.13	0.41	0.12	0.00
8.	8.31	1.34	-1.25	0.40	0.40	-0.05	-1.93	0.17	-4.03
9.	11.32	1.12	0.68	0.36	0.58	0.08	-0.39	-0.05	0.27
10.	31.41	6.36	3.22	0.82	1.12	0.03	-0.49	0.24	10.51
11.	31.91	2.66	4.78	0.40	0.34	0.33	0.80	0.13	4.59
12.	4.58	0.51	0.89	0.30	0.30	0.24	0.75	0.24	0.32
13.	22.89	1.17	2.04	0.45	0.42	0.10	0.74	0.03	-4.81
14.	2.30	0.14	0.37	0.00	0.00	0.07	1.64	0.08	-1.50
15.	2.81	0.90	0.83	0.00	0.00	0.09	-0.08	-0.09	-0.30
16.	74.94	12.36	10.93	3.00	7.00	0.06	-0.12	0.24	51.96
17.	2.20	0.05	0.01	0.00	0.00	0.02	-0.80	0.09	0.00
18.	6.95	0.56	1.00	0.43	1.50	0.02	0.79	0.21	-4.46
19.	3.69	1.76	0.48	0.15	0.00	0.01	-0.73	0.03	33.05
20.	7.52	1.32	1.53	0.00	0.70	0.17	0.16	0.12	0.73
21.	3.45	1.43	0.64	0.00	0.00	0.03	-0.55	-0.27	7.65
22.	1.69	2.02	2.37	1.02	2.50	0.06	0.17	0.01	3.68
23.	22.74	5.03	5.62	3.00	3.00	0.03	0.12	0.38	-12.00
24.	2.38	1.02	0.70	0.90	0.70	0.06	-0.31	0.37	0.06
25.	3.29	0.59	0.94	1.00	0.60	3.29	-0.01	0.10	0.04
26.	1.28	1.45	2.21	2.14	1.10	1.28	-0.01	0.01	0.22
27.	29.64	23.73	19.08	12.55	12.55	29.64	0.00	0.03	0.50
28.	27.36	9.95	12.16	8.95	9.54	27.36	0.00	0.03	-0.09
29.	2.19	0.33	0.30	0.11	0.13	2.19	0.08	0.11	0.69
30.	34.27	3.81	5.37	1.82	1.61	34.27	-0.01	0.01	-0.13
31.	0.97	0.15	0.16	0.00	0.00	0.97	0.22	0.13	-0.14
32.	7.64	0.03	2.56	0.09	0.14	7.64	-0.08	-0.06	0.15
33.	7.94	1.23	2.00	0.50	0.70	7.94	-0.05	0.08	0.04
34.	18.68	2.84	1.63	0.10	0.25	18.68	0.00	0.03	0.11
35.	22.35	3.09	2.95	0.36	0.38	22.35	0.06	0.25	-0.09
36.	3.94	0.67	0.82	0.30	0.30	3.94	0.20	0.23	0.22
37.	9.57	1.79	1.51	0.00	0.34	9.57	0.04	0.13	-0.05
38.	2.52	0.39	0.33	0.12	0.16	2.52	0.29	0.09	0.29
39.	5.21	0.16	0.75	0.28	0.54	5.21	-0.01	0.09	0.05
40.	19.18	8.10	6.80	2.00	2.25	19.18	0.00	0.05	0.25
41.	2.81	-0.17	-0.12	0.00	0.00	2.81	-1.60	0.02	-0.06
42.	10.48	1.05	1.50	0.68	0.86	10.48	0.02	0.03	-0.08
43.	5.57	1.22	0.43	0.13	0.12	5.57	-0.02	0.01	-0.13

Appendix F: Data for value relevance test *continue*

S/N	2011 BVPS	2010 NIPS	2011 NIPS	2010 DIV0	2011 DIV1	2010 ΔNI/Pit-1	2011 ΔNI	2011 CF	2011 R
44	2.59	0.34	0.42	0.15	0.16	0.14	0.24	0.12	1.05
45	40.51	4.23	1.14	1.86	2.09	0.01	-0.73	-0.05	-4.97
46	0.79	0.17	0.24	0.07	0.12	0.13	0.41	0.12	0.00
47	8.31	1.34	-1.25	0.40	0.40	-0.05	-1.93	0.17	-4.03
48	11.32	1.12	0.68	0.36	0.58	0.08	-0.39	-0.05	0.27
49	31.41	6.36	3.22	0.82	1.12	0.03	-0.49	0.24	10.51
50	31.91	2.66	4.78	0.40	0.34	0.33	0.80	0.13	4.59
51	4.58	0.51	0.89	0.30	0.30	0.24	0.75	0.24	0.32
52	22.89	1.17	2.04	0.45	0.42	0.10	0.74	0.03	-4.81
53	7.94	1.23	2.00	0.50	0.70	7.94	-0.05	0.08	0.04
54	18.68	2.84	1.63	0.10	0.25	18.68	0.00	0.03	0.11
55	22.35	3.09	2.95	0.36	0.38	22.35	0.06	0.25	-0.09
56	3.94	0.67	0.82	0.30	0.30	3.94	0.20	0.23	0.22
57	9.57	1.79	1.51	0.00	0.34	9.57	0.04	0.13	-0.05
58	2.52	0.39	0.33	0.12	0.16	2.52	0.29	0.09	0.29
59	5.21	0.16	0.75	0.28	0.54	5.21	-0.01	0.09	0.05
60	7.94	1.23	2.00	0.50	0.70	7.94	-0.05	0.08	0.04

Appendix G: Data for Earnings Management test: IFRS

S/N	AUD	ΔCF	CF	ACC	%ΔLL	Turn	Size	Growth	ΔREV
1.	1	6.52	0.09	0.03	0.16	0.97	7.99	-0.08	-0.18
2.	1	-0.85	-0.04	0.09	0.11	1.22	7.66	-0.07	-0.11
3.	1	-0.44	0.22	-0.01	0.04	1.35	8.03	0.08	0.10
4.	1	-0.28	0.14	-0.07	0.16	0.83	8.12	-0.11	-0.18
5.	1	0.41	-0.33	0.34	1.02	0.52	6.70	0.01	-0.38
6.	0	2.11	0.10	-0.05	0.17	0.86	7.81	0.21	0.05
7.	1	0.07	-0.05	0.06	0.11	0.99	8.36	-0.06	-0.11
8.	0	-0.60	0.07	0.05	1.19	1.28	6.24	0.16	-0.29
9.	1	5.64	0.11	-0.16	1.32	2.13	6.69	-0.22	-0.48
10.	1	-0.64	-0.05	0.10	0.03	0.85	6.56	0.14	0.13
11.	1	-0.50	0.11	-0.03	0.00	0.31	8.54	0.09	-0.49
12.	1	0.88	0.11	-0.05	0.34	0.52	7.43	0.09	-0.10
13.	1	0.46	0.20	-0.14	0.19	1.41	7.04	0.00	-0.15
14.	1	0.01	0.03	0.04	0.00	0.30	7.85	-0.03	-0.08
15.	1	3.69	0.08	-0.01	0.04	1.23	6.36	0.03	-0.06
16.	1	0.68	-0.10	0.18	-0.05	0.59	7.73	0.37	0.53
17.	1	-0.40	0.20	-0.01	0.30	0.39	8.98	0.00	-0.15
18.	0	-0.11	0.09	-0.09	-0.03	1.06	6.92	0.06	0.07
19.	1	0.97	0.20	-0.12	-0.13	1.41	7.71	0.02	-0.01
20.	1	-0.67	0.05	0.02	-0.10	1.06	7.46	-0.15	0.28
21.	0	-0.14	0.12	0.01	-0.06	0.96	10.20	-0.01	-0.06
22.	0	0.46	-0.26	0.34	-0.04	0.76	7.39	0.06	0.01
23.	1	1.28	0.01	0.53	0.08	2.27	6.49	0.13	0.11
24.	1	0.71	0.38	-0.21	-0.12	1.06	8.40	0.06	0.07
25.	1	1.04	0.34	-0.19	0.38	0.90	7.10	0.04	-0.05
26.	1	6.52	0.09	0.03	0.16	0.97	7.99	-0.08	-0.18
27.	1	-0.85	-0.04	0.09	0.11	1.22	7.66	-0.07	-0.11
28.	1	-0.44	0.22	-0.01	0.04	1.35	8.03	0.08	0.10
29.	1	-0.28	0.14	-0.07	0.16	0.83	8.12	-0.11	-0.18
30.	1	0.41	-0.33	0.34	1.02	0.52	6.70	0.01	-0.38
31.	0	2.11	0.10	-0.05	0.17	0.86	7.81	0.21	0.05
32.	1	0.07	-0.05	0.06	0.11	0.99	8.36	-0.06	-0.11
33.	0	-0.60	0.07	0.05	1.19	1.28	6.24	0.16	-0.29
34.	1	5.64	0.11	-0.16	1.32	2.13	6.69	-0.22	-0.48
35.	1	-0.64	-0.05	0.10	0.03	0.85	6.56	0.14	0.13
36.	1	-0.50	0.11	-0.03	0.00	0.31	8.54	0.09	-0.49
37.	1	0.88	0.11	-0.05	0.34	0.52	7.43	0.09	-0.10
38.	1	0.46	0.20	-0.14	0.19	1.41	7.04	0.00	-0.15
39.	1	0.01	0.03	0.04	0.00	0.30	7.85	-0.03	-0.08
40.	1	3.69	0.08	-0.01	0.04	1.23	6.36	0.03	-0.06
41.	1	0.68	-0.10	0.18	-0.05	0.59	7.73	0.37	0.53
42.	1	-0.40	0.20	-0.01	0.30	0.39	8.98	0.00	-0.15
43.	0	-0.11	0.09	-0.09	-0.03	1.06	6.92	0.06	0.07

Appendix G: Data for Earnings Management test *continue*

S/N	AUD	ΔCF	CF	ACC	%ΔLL	Turn	Size	Growth	ΔREV
44	1	-0.13	0.23	0.38	0.50	1.54	7.84	0.18	-0.06
45	1	0.33	-0.16	0.31	-0.03	1.70	7.51	0.17	0.10
46	1	0.27	-0.02	0.15	0.06	1.27	7.89	0.22	-0.03
47	1	0.21	-0.06	0.20	-0.02	1.23	8.01	0.02	-0.07
48	1	0.04	0.01	0.84	-0.81	0.67	7.69	0.12	-0.11
49	1	0.00	0.05	0.24	-0.89	1.06	8.24	0.13	-0.21
50	1	0.10	-0.01	-0.01	-0.61	1.67	5.97	0.10	-0.22
51	1	-0.27	0.27	-0.23	-1.85	3.77	6.53	0.11	0.51
52	0	0.11	-0.01	-0.08	0.45	0.91	6.42	-0.08	0.06
53	1	0.20	-0.14	0.42	0.84	0.41	8.18	0.42	0.08
54	0	0.50	-0.32	0.06	0.30	1.45	6.94	0.14	0.01
55	1	0.10	-0.04	0.07	9.07	1.38	7.01	0.01	0.07
56	1	0.25	-0.14	0.28	1.59	0.60	7.54	0.08	0.42
57	1	0.14	-0.07	0.90	0.13	1.20	6.33	0.09	-0.04
58	1	-0.16	0.17	0.39	0.31	0.63	7.79	-0.09	1.10
59	1	0.42	-0.10	0.24	1.57	0.59	8.60	0.16	-0.15
60	1	0.08	-0.12	-0.04	0.46	0.88	6.99	0.01	-0.06

Appendix G: Data for Earnings Management test: NG-GAAP

S/N	AUD	ΔCF	CF	ACC	%ΔLL	Turn	Size	Growth	ΔREV
1.	1	0.50	-0.13	0.23	0.38	1.54	7.84	0.18	0.07
2.	1	-0.03	0.33	-0.16	0.31	1.70	7.51	0.17	-0.06
3.	1	0.06	0.27	-0.02	0.15	1.27	7.89	0.22	-0.04
4.	1	-0.02	0.21	-0.06	0.20	1.23	8.01	0.02	-0.08
5.	0	-0.81	0.04	0.01	0.84	0.67	7.69	0.12	-0.24
6.	1	-0.89	0.00	0.05	0.24	1.06	8.24	0.13	-0.23
7.	0	-0.61	0.10	-0.01	-0.01	1.67	5.97	0.10	0.09
8.	1	-1.85	-0.27	0.27	-0.23	3.77	6.53	0.11	0.36
9.	1	0.45	0.11	-0.01	-0.08	0.91	6.42	-0.08	-0.06
10.	1	0.84	0.20	-0.14	0.42	0.41	8.18	0.42	0.10
11.	1	0.30	0.50	-0.32	0.06	1.45	6.94	0.14	-0.03
12.	1	9.07	0.10	-0.04	0.07	1.38	7.01	0.01	-0.07
13.	1	1.59	0.25	-0.14	0.28	0.60	7.54	0.08	-0.11
14.	1	0.13	0.14	-0.07	0.90	1.20	6.33	0.09	-0.21
15.	1	0.31	-0.16	0.17	0.39	0.63	7.79	-0.09	-0.22
16.	1	1.57	0.42	-0.10	0.24	0.59	8.60	0.16	0.51
17.	0	0.46	0.08	-0.12	-0.04	0.88	6.99	0.01	0.06
18.	1	-1.01	0.00	0.10	-0.08	1.83	7.56	0.05	0.08
19.	1	0.53	0.21	-0.09	0.01	0.95	7.51	0.15	0.01
20.	0	0.94	0.15	0.03	0.03	1.12	10.09	0.24	0.07
21.	0	-0.63	0.15	-0.14	0.15	0.69	7.16	1.07	0.42
22.	1	-0.04	0.33	0.01	0.57	1.47	6.47	0.18	-0.04
23.	1	1.32	0.46	-0.13	0.85	1.98	8.06	0.22	1.10
24.	1	1.36	0.36	-0.15	0.46	0.96	7.00	0.09	-0.15
25.	1	0.50	-0.13	0.23	0.38	1.54	7.84	0.18	0.07
26.	1	-0.03	0.33	-0.16	0.31	1.70	7.51	0.17	-0.06
27.	1	1.59	0.25	-0.14	0.28	0.60	7.54	0.08	-0.11
28.	1	0.13	0.14	-0.07	0.90	1.20	6.33	0.09	-0.21
29.	0	0.31	-0.16	0.17	0.39	0.63	7.79	-0.09	-0.22
30.	1	1.57	0.42	-0.10	0.24	0.59	8.60	0.16	0.51
31.	0	0.46	0.08	-0.12	-0.04	0.88	6.99	0.01	0.06
32.	1	-1.01	0.00	0.10	-0.08	1.83	7.56	0.05	0.08
33.	1	0.53	0.21	-0.09	0.01	0.95	7.51	0.15	0.01
34.	1	0.94	0.15	0.03	0.03	1.12	10.09	0.24	0.07
35.	1	-0.63	0.15	-0.14	0.15	0.69	7.16	1.07	0.42
36.	1	-0.03	0.33	-0.16	0.31	1.70	7.51	0.17	-0.06
37.	1	0.06	0.27	-0.02	0.15	1.27	7.89	0.22	-0.04
38.	1	-0.02	0.21	-0.06	0.20	1.23	8.01	0.02	-0.08
39.	1	-0.81	0.04	0.01	0.84	0.67	7.69	0.12	-0.24
40.	1	-0.89	0.00	0.05	0.24	1.06	8.24	0.13	-0.23
41.	0	-0.61	0.10	-0.01	-0.01	1.67	5.97	0.10	0.09
42.	1	-1.85	-0.27	0.27	-0.23	3.77	6.53	0.11	0.36
43.	1	0.45	0.11	-0.01	-0.08	0.91	6.42	-0.08	-0.06

Appendix G: Data for Earnings Management test *continue*

S/N	AUD	ΔCF	CF	ACC	%ΔLL	Turn	Size	Growth	ΔREV
44	1	-0.02	0.21	-0.06	0.20	1.23	8.01	0.02	0.07
45	1	-0.81	0.04	0.01	0.84	0.67	7.69	0.12	-0.06
46	1	-0.89	0.00	0.05	0.24	1.06	8.24	0.13	-0.04
47	1	-0.61	0.10	-0.01	-0.01	1.67	5.97	0.10	-0.08
48	0	-1.85	-0.27	0.27	-0.23	3.77	6.53	0.11	-0.24
49	1	0.45	0.11	-0.01	-0.08	0.91	6.42	-0.08	-0.23
50	0	0.84	0.20	-0.14	0.42	0.41	8.18	0.42	0.09
51	1	0.30	0.50	-0.32	0.06	1.45	6.94	0.14	0.36
52	1	9.07	0.10	-0.04	0.07	1.38	7.01	0.01	-0.06
53	1	1.59	0.25	-0.14	0.28	0.60	7.54	0.08	0.10
54	1	0.13	0.14	-0.07	0.90	1.20	6.33	0.09	-0.03
55	1	0.31	-0.16	0.17	0.39	0.63	7.79	-0.09	-0.07
56	1	1.57	0.42	-0.10	0.24	0.59	8.60	0.16	-0.11
57	1	0.46	0.08	-0.12	-0.04	0.88	6.99	0.01	-0.21
58	1	-1.01	0.00	0.10	-0.08	1.83	7.56	0.05	-0.22
59	1	0.53	0.21	-0.09	0.01	0.95	7.51	0.15	0.51
60	0	0.94	0.15	0.03	0.03	1.12	10.09	0.24	0.06

Appendix H: Financial statement element for the computation of capital maintenance inputs

S/N	Fixed Assets 2013	Fixed Assets 2014	Equity 2013	Equity 2014	Current Assets 2013
1.	26,250,037	29,346,717	53,817,512	58,526,202	57,280,617
2.	23,224,938	24,830,779	4,375,444	7,478,808	18,401,327
3.	65,878,425	67,514,854	40,594,801	35,939,643	41,755,808
4.	88,112,852	90,683,405	46,039,111	45,061,717	32,238,619
5.	34,969,128	36,085,450	18,553,083	20,605,248	20,452,446
6.	70,264,835	80,421,776	98,943,111	96,651,666	107,036,628
7.	348,989	769,917	597,554	699,703	716,661
8.	678,886	728,107	1,773,962	1,480,063	3,262,150
9.	876,309	878,958	2,476,257	2,459,830	2,040,378
10.	123,128,764	120,154,329	92,641,665	276,664,338	36,688,153
11.	9,864,569	9,666,496	12,455,803	13,753,157	12,564,592
12.	2,582,637	2,672,818	3,286,321	3,747,004	6,212,526
13.	48,649,149	49,747,587	47,162,040	51,261,632	18,695,688
14.	555,701	547,040	775961	924602	1,287,370
15.	17,351,051	15,353,413	18,233,825	14,074,523	33,066,395
16.	452,046,889	526,721,478	571,562,826	638,543,114	136,939,020
17.	5,028,674	5,182,030	4,621,308	4,652,178	2,925,028
18.	18,607,026	18,513,248	31,749,548	27,607,313	31,110,422
19.	16,929,458	16,132,914	23,994,931	11,542,026	26,231,468
20.	6,816,998,216	7,198,910,753	8,284,619,000	9,445,658,415	7,958,806,666
21.	15,496,354	18,677,771	9,380,173	11,269,923	6,624,318
22.	414,158	399,746	1,268,148	1,180,573	2,554,585
23.	142,348,420	153,366,133	93,447,892	112,359,185	56,866,627
24.	5,749,055	6,683,479	6,892,626	6,307,306	5,682,112
25.	72,814,721	33,681,012	1,583,323	2,740,875	1,468,474
26.	32,249,928	22,615,278	1,598,672	8,200,458	137,142,382
27.	77,728,293	54,518,309	78,304,741	143,496	2,049,602
28.	106,009,667	67,398,153	679,096	279,003	4,382,386
29.	2,167,153	1,029,940	5,664,556	1,551,763	2,159,362
30.	47,930,278	30,914,264	740,347	423,944	6,538,377
31.	172,539,746	92,500,212	2,762,593	381,501	180,980
32.	941,609	357,909	10,073,211	1,678,471	1,425,652
33.	3,369,113	2,015,968	6,251,478	4,537,574	30,914,264
34.	20,203,112	12,447,478	80,039,534	2,740,875	92,500,212
35.	2,879,366	1,345,495	509,152	8,200,458	357,909
36.	2,656,559	977,805	1,353,145	143,496	2,015,968
37.	48,485,662	38,178,068	6,229,671	279,003	12,447,478
38.	65,211,835	18,484,903	1,225,010	1,551,763	1,345,495
39.	274,741	274,829	1,596,793	423,944	977,805
40.	18,021,590	6,694,378	10,307,595	381,501	38,178,068
41.	10,116,222	6,998,755	46,726,932	1,678,471	18,484,903

42.	18,021,590	33,681,012	80,039,534	6,229,671	33,681,012

Appendix H: *continue*

43.	10,116,222	22,615,278	509,152	1,225,010	22,615,278
44.	65,211,835	54,518,309	1,353,145	1,596,793	54,518,309
45.	2,286,067	67,398,153	6,229,671	10,307,595	67,398,153
46.	49,020,984	1,029,940	1,225,010	46,726,932	1,029,940
47.	172,508,941	30,914,264	1,596,793	3,117,467	30,914,264
48.	943,686	92,500,212	10,307,595	16,726,932	92,500,212
49.	3,358,028	33,681,012	46,726,932	951,756	33,681,012
50.	18,938,442	6,998,755	3,117,467	26,352,592	22,615,278
51.	2,082,112	18,484,903	16,726,932	208,238,023	54,518,309
52.	2,843,667	1,207,335	951,756	5,929,396	3,369,113
53.	44,330,405	20,203,112	26,352,592	2,015,968	20,203,112
54.	152,577,460	2,879,366	208,238,023	12,447,478	2,879,366
55.	18,021,590	2,656,559	5,929,396	1,345,495	2,656,559
56.	10,116,222	48,485,662	2,015,968	6,229,671	48,485,662
57.	65,211,835	65,211,835	12,447,478	1,225,010	65,211,835
58.	2,286,067	6,998,755	1,345,495	1,596,793	3,369,113
59.	49,020,984	18,484,903	977,805	10,307,595	20,203,112
60.	34,650,320	24,830,240	38,178,068	46,726,932	2,879,366

Appendix H: *continue*

S/N	Current Assets 2014	Current liabilities 2013	Current Liabilities 2014
61.	30,654,765	27,578,687	34,532,088
62.	18,571,159	28,077,640	31,370,833
63.	37,045,050	33,233,095	44,638,052
64.	40,840,041	51,275,097	44,248,479
65.	27,732,657	27,503,156	28,059,339
66.	141,505,096	81,893,577	116,115,447
67.	970,022	399,744	696,154
68.	4,200,045	1,172,959,	3,110,795
69.	2,075,700	798,623	922,893
70.	25,299,262	39,334,496	36,526,476
71.	17,472,739	4,760,565	9,423,313
72.	7,720,151	5,212,095	6,664,532
73.	21,693,256	7,733,336	8,128,613
74.	1,541,326	829,846	971,609
75.	32,810,175	29,526,728	32,973,836
76.	117,883,370	150,992,846	205,829,677
77.	2,747,226	2,919,699	2,790,155
78.	32,654,512	15,072,479	20,712,273
79.	12,336,296	14,386,781	14,042,218
80.	7,405,955	4,101,945	3,496,155
81.	5,575,071	7,859,335	6,604,447
82.	2,576,122	1,684,573	1,825,999
83.	45,285,469	86,834,468	100,295,715

84.	5,622,868	3,806,716	5,346,115

Appendix H: *continue*

85.	64,522,412	27,578,687	34,532,088
86.	18,571,159	28,077,640	31,370,833
87.	58,526,202	1,480,063	2,459,830
88.	7,478,808	2,459,830	276,664,338
89.	35,939,643	276,664,338	13,753,157
90.	45,061,717	13,753,157	3,747,004
91.	20,605,248	3,747,004	51,261,632
92.	96,651,666	51,261,632	924602
93.	699,703	924602	14,074,523
94.	1,480,063	14,074,523	638,543,114
95.	2,459,830	638,543,114	4,652,178
96.	276,664,338	4,652,178	27,607,313
97.	13,753,157	27,607,313	11,542,026
98.	3,747,004	11,542,026	9,445,658,415
99.	15,345,786	13,867,300	11,269,923
100.	3,747,004	2,015,968	14,074,523
101.	51,261,632	12,447,478	638,543,114
102.	924602	1,345,495	4,652,178
103.	14,074,523	2,015,968	27,607,313
104.	638,543,114	12,447,478	14,074,523
105.	8,128,613	51,261,632	18,695,688
106.	53,817,512	58,526,202	29,346,717
107.	4,375,444	7,478,808	24,830,779
108.	40,594,801	35,939,643	67,514,854
109.	46,039,111	45,061,717	90,683,405
110.	18,553,083	20,605,248	36,085,450
111.	98,943,111	96,651,666	80,421,776
112.	597,554	699,703	769,917
113.	1,773,962	1,480,063	728,107
114.	2,476,257	2,459,830	878,958
115.	92,641,665	276,664,338	120,154,329
116.	12,455,803	13,753,157	9,666,496
117.	3,286,321	3,747,004	2,672,818
118.	47,162,040	51,261,632	49,747,587
119.	775961	924602	547,040
120.	18,233,825	14,074,523	15,353,413

Appendix I: Value Added

NG-GAAP

S/N	2011	S/N	2011	S/N	2011
121.	32,728,935	42.	1,782,202	81.	47,928,590
122.	47,522,592	43.	6,308,673	82.	1,958
123.	33,070	44.	142,740,171	83.	1,831,222
124.	1,963,004	45.	1,038,445	84.	41,430
125.	30,214	46.	11,600,103	85.	89,427,268
126.	88,000,705	47.	5,423,352	86.	907,330
127.	691,732	48.	806,065	87.	31,374
128.	24,920	49	102,429,077	88.	13,732,800
129.	13,553,995	50.	1,984,515	89.	69,311
130.	36,627	51.	5,934	90.	-61,504
131.	-83,887	52.	1,579,198	91.	-5,138,524
132.	-419,226	53.	2,096,652	92.	6,175,225
133.	1,296,922	54.	474,344	93.	113,276
134.	106,903	55.	889,845	94.	5,232,039
135.	3,279,266	56.	18,228,108	95.	2,443,745
136.	2,028,459	57.	13,121,705	96.	554,581
137.	817,288	58.	6,215,875	97.	-212,748
138.	450,392	59.	13,951,839	98.	99,342
139.	-336,637	60.	572,025	99.	1,034,350
140.	827,542	61.	2,175,671	100.	1,579,198
141.	1,361,246	62.	1,579,198	101.	2,096,652
142.	1,982,669	63.	33,070	100.	474,344
143.	476,927	64.	1,963,004	102.	889,845
144.	1,174,442	65.	30,214	103.	18,228,108
145.	26,182,717	66.	88,000,705	104.	13,121,705
146.	12,923,727	67.	691,732	105.	6,215,875
147.	5,702,936	68.	24,920	106.	13,951,839
148.	14,376,614	69.	13,553,995	107.	572,025
149.	568,975	70.	38,821,925	108.	2,175,671
150.	2,412,961	71.	294,962	109.	35,940,933
151.	38,106,893	72.	7,026,817	110.	1,032,829
152.	-342,917	73.	6,114,381	111.	12,514,264
153.	19,180,965	74.	4,657,525	112.	5,423,352
154.	12,028,303	75.	575,987	113.	826,932
155.	46,641,358	76.	331,831	114.	108,069,689
156.	294,962	77.	1,877,822	115.	1,032,829
157.	8,409,846	78.	6,203,808	116.	12,514,264
158.	5,584,764	79.	142,841,064	117.	5,423,352
159.	4,480,888	80.	1,032,829	118.	826,932
160.	575,013	81.	588,760		
161.	2,562,855	82.	2,349,855		

Appendix I: Value Added

IFRS

S/N	2011	S/N	2011	S/N	2011
1.	39,825,462	42.	1,877,822	81.	817,288
2.	47,928,590	43.	6,203,808	82.	450,392
3.	1,958	44.	142,841,064	83.	-336,637
4.	1,831,222	45.	1,032,829	84.	827,542
5.	41,430	46.	12,514,264	85.	1,361,246
6.	89,427,268	47.	5,423,352	86.	1,982,669
7.	907,330	48.	826,932	87.	476,927
8.	31,374	49	108,069,689	88.	1,174,442
9.	13,732,800	50.	264,471	89.	26,182,717
10.	69,311	51.	5,933	90.	12,923,727
11.	-61,504	52.	1,963,004	91.	5,702,936
12.	-5,138,524	53.	30,214	92.	14,376,614
13.	6,175,225	54.	88,000,705	93.	568,975
14.	113,276	55.	691,732	94.	2,412,961
15.	5,232,039	56.	24,920	95.	38,106,893
16.	2,443,745	57.	13,553,995	96.	-342,917
17.	554,581	58.	36,627	97.	19,180,965
18.	-212,748	59.	-83,887	98.	12,028,303
19.	99,342	60.	-419,226	99.	1,579,198
20.	1,034,350	61.	1,296,922	100.	2,096,652
21.	1,579,198	62.	106,903	101.	474,344
22.	2,096,652	63.	3,279,266	100.	889,845
23.	474,344	64.	2,028,459	102.	18,228,108
24.	889,845	65.	817,288	103.	13,121,705
25.	18,228,108	66.	450,392	104.	6,215,875
26.	13,121,705	67.	7,026,817	105.	13,951,839
27.	6,215,875	68.	6,114,381	106.	572,025
28.	13,951,839	69.	4,657,525	107.	2,175,671
29.	572,025	70.	575,013	108.	35,940,933
30.	2,175,671	71.	331,831	109.	-128,922
31.	35,940,933	72.	1,877,822	110.	8,456,049
32.	-128,922	73.	6,203,808	111.	8,121,540
33.	8,456,049	74.	264,471	112.	38,821,925
34.	8,121,540	75.	5,933	113.	294,962
35.	38,821,925	76.	1,963,004	114.	13,121,705
36.	294,962	77.	30,214	115.	6,215,875
37.	7,026,817	78.	88,000,705	116.	13,951,839
38.	6,114,381	79.	691,732	117.	572,025
39.	4,657,525	80.	24,920	118.	13,121,705
40.	575,013	81.	13,553,995		
41.	331,831	82.	36,627		

Appendix J: Data for Corporate Social Disclosure test

S/N	T(PRE)	T(POST)	AUDIT	F0	SIZE	LEV	FLOAT
1.	1.73	1.96	1	1	7.84	0.20	0.28
2.	2.04	2.22	1	1	7.51	0.40	0.4
3.	2.76	2.9	1	1	7.89	0.30	0.6
4.	3.57	3.57	1	1	8.01	0.40	0.52
5.	1.69	1.69	1	1	6.02	0.42	0.22
6.	1.87	2.13	0	1	7.69	0.30	0.2
7.	1.81	2.11	1	1	8.24	0.32	0.4
8.	1.05	0.96	0	1	5.97	0.20	0.1
9.	2.4	3.49	1	1	6.53	0.09	0.36
10.	1.548	2.35	1	1	6.42	0.15	0.25
11.	2.61	3.05	1	1	8.18	0.21	0.4
12.	1.07	2.2	1	1	6.94	0.16	0.3
13.	1.91	2.08	1	0	7.01	0.20	0.2
14.	2.11	3.38	1	1	7.54	0.23	0.4
15.	1.44	2	1	1	6.33	0.30	0.3
16.	2.99	3.73	1	1	7.79	0.19	0.4
17.	2.86	8.01	1	1	8.60	0.32	0.42
18.	0.83	0.83	0	1	5.80	0.21	0.3
19.	1.23	1.32	1	1	6.22	0.19	0.52
20.	2.58	3.05	1	1	7.51	0.21	0.6
21.	1.12	1.12	0	1	7.20	0.30	0.3
22.	1.31	1.4	0	1	5.80	0.12	0.6
23.	1.41	2.31	1	0	6.47	0.42	0.3
24.	2.94	3.36	1	1	8.06	0.32	0.52
25.	1.06	1.2	1	1	7.00	0.13	0.3
26.	2.66	3.27	1	0	6.78	0.18	0.4
27.	1.21	1.59	1	0	5.33	0.22	0.2
28.	1.27	1.82	1	0	5.42	0.3	0.2
29.	1.12	1.41	1	1	5.9	0.42	0.36
30.	1.64	1.78	1	0	6.82	0.19	0.2
31.	0.72	0.72	0	1	6.22	0.09	0.2
32.	1.44	2	1	1	6.33	0.30	0.3
33.	2.99	3.73	1	1	7.79	0.19	0.4
34.	2.86	8.01	1	1	8.60	0.32	0.42
35.	0.83	0.83	0	1	5.80	0.21	0.3
36.	1.23	1.32	1	1	6.22	0.19	0.52
37.	2.58	3.05	1	1	7.51	0.21	0.6
38.	1.12	1.12	0	1	7.20	0.30	0.3
39.	1.31	1.4	0	1	5.80	0.12	0.6
40.	1.44	2	1	1	6.33	0.30	0.3
41.	2.99	3.73	1	1	7.79	0.19	0.4
42.	2.61	3.05	1	1	8.18	2.61	3.05

Appendix J: Data for Corporate Social Disclosure test

S/N	T(PRE)	T(POST)	AUDIT	F0	SIZE
43.	1.91	2.08	1	0	7.01
44.	2.11	3.38	1	1	7.54
45.	1.44	2	1	1	6.33
46.	2.99	3.73	1	1	7.79
47.	2.86	8.01	1	1	8.60
48.	0.83	0.83	0	1	5.80
49.	1.23	1.32	1	1	6.22
50.	2.58	3.05	1	1	7.51
51.	1.12	1.12	0	1	7.20
52.	1.31	1.4	0	1	5.80
53.	1.41	2.31	1	0	6.47
54.	2.94	3.36	1	1	8.06
55.	1.06	1.2	1	1	7.00
56	2.66	3.27	1	0	6.78
57.	2.11	3.38	1	1	7.54
58.	1.44	2	1	1	6.33
59.	2.99	3.73	1	1	7.79
60	2.86	8.01	1	1	8.60
61	0.83	0.83	0	1	5.80
62.	1.87	2.13	0	1	7.69