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## **The Impact of Accounting Reform on Accounting Quality: Evidence from Nigeria**

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## **The Impact of Accounting Reform on Accounting Quality: Evidence from Nigeria**

### **Abstract**

The effectiveness of International Financial Reporting Standards (IFRS) is dependent on the strength of enforcement of accounting standards in a given country. This study explores the implications of the adoption of IFRS in Nigeria after the enforcement of accounting standards was strengthened. The strengthening of accounting standards enforcement, and the subsequent adoption of IFRS in Nigeria, was recommended by the World Bank to improve the country's regulatory outlook after a capital market crisis in 2007/2008 that was triggered by widespread accounting irregularities. Results indicate that accounting quality declined in Nigeria following the adoption of IFRS; while earnings management increased, timely loss recognition and earnings persistence reduced. Our study contributes to the burgeoning literature on IFRS adoption and concludes that the effect of IFRS adoption is contextual. Therefore, accounting regulatory institutions operating in a similar context to Nigeria should localise IFRS.

**Keywords:** IFRS; enforcement; public accountability model; timely loss recognition; earnings management; Nigeria.

## 1. Introduction

The weak governance structures in many developing countries, including the African continent, have been blamed for the various financial scandals in those countries (Zeff, 2012). Accordingly, the Nigerian capital market crisis of 2008<sup>1</sup> occurred as a result of weak regulatory structures and widespread accounting irregularities (World Bank, 2011). The World Bank (2004, 2011) recommended the strengthening of accounting standards enforcement through the establishment of the Financial Reporting Council of Nigeria (FRCN) and the adoption of International Financial Reporting Standards (IFRS) to rejuvenate Nigeria's accounting regulatory architecture and encourage Foreign Direct Investment inflows. However, the benefits of IFRS adoption remain inconclusive (Leuz & Wysocki, 2016) and vary across different jurisdictions (Barth & Israeli, 2013), especially in emerging economies with weak institutional structures (Mongrut & Winkelried, 2018). Thus, we seek to establish whether the accounting reforms recommended by the World Bank for Nigeria have improved the country's accounting quality.

Prior studies have shown that the effectiveness of IFRS in enhancing accounting quality is dependent on the strength of a country's enforcement mechanisms (Cai, Rahman, & Courtenay, 2014). However, Kim (2016) concludes that enforcement without IFRS adoption does not improve accounting quality. We examine both aspects of this argument in this study, by assessing the impact of the adoption of IFRS on the accounting quality of Nigerian listed firms. Our study explores the unique setting of Nigeria, where accounting standards enforcement was strengthened prior to IFRS adoption, to determine the effect of the adoption of IFRS on accounting quality. This follows Brown, Preiato, and Tarca's (2014) argument that

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<sup>1</sup> Foreign investors whose countries had suffered from the global financial crisis pulled out of the Nigerian market to cushion the deficit in their home country. Their pull-out created surplus shares beyond what domestic investors could absorb, leading to a fall in prices of shares on the Nigerian stock exchange (<https://punchng.com/eleven-years-after-stock-market-crash-investors-neglect-n129bn-dividends/>). This was further exacerbated by accounting irregularities of many Nigerian companies, especially the banks, through inflation of balance sheet values, which further led to a plunge in share prices after the irregularities were uncovered (SEC, 2009; ROSC, 2011).

enforcement proxies in prior studies (the rule of law, investor protection, and stock exchange rules) are biased, and so the strength of institutions that enforce accounting standards should be adopted as a measurement of enforcement. Moreover, Leuz and Wysocki (2016) posit that the effect of IFRS adoption in single-country contexts should be explored to reveal new insights. However, Barth and Israeli (2013) argue that enforcement of IFRS cannot be separated from its adoption. Therefore, following this viewpoint, we have not separated the enforcement of IFRS from its adoption. Rather, we have adopted a single label – IFRS adoption – for both the adoption of IFRS and its enforcement.

We tested the changes in earnings management practices, timely loss recognition, and earnings persistence of Nigerian listed firms following the adoption of IFRS. We adopted the modified Jones model and the abnormal working capital accrual model for earnings management, changes in large losses for timely loss recognition, and the earnings persistence model formulated by Sloan (1996) as measures of accounting quality. Our results show that earnings management increased, and recognition of large losses and persistence of earnings reduced in the post-IFRS adoption period.

This study contributes to the literature in the following ways. Firstly, it presents the implications of accounting reform on accounting quality in the context of a country with weak macro-level governance structures (e.g. the rule of law, investor protection and the level of corruption) but improved accounting standards enforcement. Thus, our study contributes to the scarce literature that explores the implications for accounting quality of strengthening accounting standards enforcement institutions<sup>2</sup>. Secondly, this study contributes to the burgeoning literature on the impact of IFRS adoption, which remains inconclusive in respect of the effect of enforcement on accounting quality (Leuz & Wysocki, 2016). Thirdly, it

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<sup>2</sup> The literature on the implications is limited to the study of Ernstberger, Stich, and Vogler (2012) in Germany and the cross-country study of Maso, Kanagaretnam, Lobo, and Terzani (2018) on banks' earnings quality.

contributes to the limited literature on the implications of accounting reform<sup>3</sup> for accounting quality in Africa (Nyamori, Abdul-Rahaman, & Samkin, 2017).

The remainder of the paper is organized as follows. Section 2 describes the institutional setting in Nigeria. Section 3 presents the theoretical underpinning, review of prior studies, and the development of hypotheses. Section 4 explains the research methods, and is followed by the discussion of results in Section 5. Section 6 concludes the study and explains the limitations and avenues for further research.

## **2. The Institutional Setting and Accounting Reform in Nigeria**

The Nigerian Accounting Standards Board (NASB) was created in 1982 on the initiative of the Institute of Chartered Accountants of Nigeria to set accounting standards (NASB, 2009). Despite being statutorily empowered through the *NASB Act 2003* to monitor compliance with accounting standards, the World Bank (2004, 2011), through the Report on Observance of Standards and Codes: Accounting and Auditing (ROSC), identified inadequate human and material resources as constraints that hindered the NASB in fulfilling its duties. The 2004 ROSC further revealed that, despite the Nigerian Statement of Accounting Standards (SAS) being largely based on International Accounting Standards (IAS), the standards were relatively less stringent in terms of disclosure requirements.

The Corporate Affairs Commission (CAC) was established by the repealed *Companies Act 1968* (Okike, 2007), and is responsible for company registration and for administering the compliance requirements of the *Companies and Allied Matters Act (CAMA) 1990*. All companies are expected to file their audited financial statements with the CAC within 42 days of the completion of their annual general meetings in line with the requirements of *CAMA 1990*. However, the 2004 ROSC reported that many companies failed to do so, and the financial

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<sup>3</sup> This assertion excludes IFRS-related studies that examine the impact of IFRS only but do not consider other reforms in accounting such as corporate governance and the establishment or strengthening of enforcement institutions.

statements of non-listed firms were not available at all. This weakness in enforcement was accentuated by the lack of proper record-keeping, and by corruption (World Bank, 2004).

The Securities and Exchange Commission (SEC) was established by *Decree<sup>4</sup> No. 71 of 1979* and is charged with protecting investors against unscrupulous practices of capital market participants, as well as regulating the capital market through the *Investment and Securities Act 1999* and the *Securities and Exchange Commission Rules 1999*. The Nigerian Stock Exchange (NSE) was established by the *Nigerian Stock Exchange Act 1961* as a registered company limited by guarantee. The NSE is regulated by the SEC and supports the SEC in the supervision of Nigerian listed firms. The *CAMA 1990* requires that listed companies submit a copy of their audited financial statements to the NSE and the SEC within three months of their accounting year-end; however, the 2004 ROSC noted that “SEC enforcement is weak and administrative sanctions and civil penalties are not adequate to deter noncompliance.” (World Bank, 2004, p. 9)

Due to the aforementioned weaknesses in the regulatory institutions, financial reporting in Nigeria was riddled with accounting irregularities. The 2011 ROSC highlighted the issue that many companies failed to disclose their revenues properly, overstating or understating their turnover. Similarly, full liabilities for employee benefits were not recognized on an accrual basis, and leases were often misclassified to improve the liabilities side of the statement of financial position and portray a favourable borrowing capacity. Non-disclosure of information related to impairment tests, impairment reviews and impairment adjustments, and of information regarding provisions, contingent assets and liabilities implies arbitrary use of these items to hide the true performance of companies. In the banking sector, banks exploited the lax regulatory structure to inflate their balance sheet values. The provision of margin loans to their clients to purchase the banks’ shares on credit caused many clients to default when the

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<sup>4</sup> Enacted by the Olusegun Obasanjo military government.

stock prices dropped, leading to a surge in non-performing loans; from 5% in 2008 to 60% in 2009. Consequently, the whole Nigerian capital market system was in a shambolic state as a result of lax regulation and improper financial reporting (SEC, 2009).

Following the discovery of the above-mentioned accounting irregularities, the 2011 ROSC recommended the adoption of IFRS and also the establishment of a more effective independent body to enforce compliance with accounting standards (World Bank, 2011). Both mechanisms were deemed vital in improving accounting quality in Nigeria.

### ***2.1 Enforcement of Accounting Standards, the NASB and the FRCN***

Based on the recommendation of the 2011 ROSC, the Financial Reporting Council of Nigeria (FRCN) was established under the *Financial Reporting Council of Nigeria Act No. 6 of 2011* to develop accounting standards and monitor compliance with the standards. The FRCN is a parastatal organization of the Federal Government of Nigeria under the Federal Ministry of Industry, Trade and Investment. The FRCN is essentially a reorganisation of the NASB with redefined authorities and monitoring procedures.

Prior to the establishment of the FRCN, the World Bank (2011) observed that the NASB had started to step up its regulatory efforts but believed there was still room for improvement:

*The NASB has improved upon its monitoring and enforcement function, thus becoming prominent in the discharge of this responsibility. Arising from its monitoring, some companies and their auditors have been sanctioned for manipulating accounting principles. (p. 15)*

The FRCN declared the mandatory adoption of IFRS by all listed companies on the NSE, from 1 January 2012. All Nigerian listed companies are required to submit a copy of their published financial statements to the FRCN, which reviews them to ensure that companies comply with the prevailing accounting standards and report their true performance.



To facilitate its standards-setting and compliance monitoring duties, the FRCN is divided into seven directorates<sup>5</sup>. The governing board of the FRCN includes several institutions<sup>6</sup> in order to represent the interests of all relevant stakeholders. The institutional structure of the FRCN gives it better controlling power and accountability with support from the different stakeholders on its board.

The FRCN undertakes quarterly and annual reviews of the financial statements of listed firms to ensure compliance with accounting standards and rigidly imposes sanctions for any instances of noncompliance found. The FRCN also requires the directors and external auditors to sign companies' reports in their own names, which means that they may become liable for any errors or noncompliance with accounting standards found in the audited reports.

While the oversight mechanisms implemented by the FRCN to enforce accounting standards seem to be working in ensuring compliance, their impact on accounting quality has not been empirically examined by any study so far.

### **3. Theoretical Framework and the Development of Hypotheses**

#### ***3.1 Public accountability model of accounting regulation***

Regulatory theory has two variants: public interest theory and capture theory (Posner, 1974). According to public interest theory, regulation "is supplied in response to the demand of the public for the correction of inefficient or inequitable market practices." (Posner, 1974, p. 337) Capture theory, on the other hand, argues that regulation is designed for the benefits of some

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<sup>5</sup> These directorates are: Directorate of Accounting Standards Private Sector; Directorate of Accounting Standards Public Sector; Directorate of Actuarial Standards; Directorate of Auditing Practices Standards; Directorate of Corporate Governance; Directorate of Inspection and Monitoring and; Directorate of Valuation Standards.

<sup>6</sup> Institute of Chartered Accountants of Nigeria (ICAN); Association of National Accountants of Nigeria; Office of the Accountant General of the Federation; Office of the Auditor General for the Federation; Central Bank of Nigeria; Chartered Institute of Stockbrokers; Chartered Institute of Taxation of Nigeria (CITN); Corporate Affairs Commission; Federal Inland Revenue Service; Federal Ministry of Industry, Trade and Investment; Federal Ministry of Finance; Nigerian Accounting Association (NAA); Nigerian Association of Chambers of Commerce, Industries, Mines and Agriculture; Nigerian Deposit Insurance Corporation (NDIC); Nigerian Institute of Estate Surveyors and Valuers; Securities and Exchange Commission; National Insurance Commission (NAICOM); Nigerian Stock Exchange (NSE); and National Pension Commission (NPC).

powerful interest groups (Stigler, 1971). Our focus is on the public interest variant of regulatory theory.

In the realm of accounting, the argument for regulation based on public interest often starts from the assumption that there is an unequal possession of information (information asymmetry) among investors (Beaver, 1989). To protect the less-informed, accounting regulation is instituted; however, Lev (1988, p. 3) viewed this as “unconvincing motivation” for accounting regulation, and instead proposed that accounting regulation is to ensure “equality of opportunity – equal access to information relevant for asset valuation. Or, in more familiar parlance – a state of symmetric distribution of information across investors.”

Inequity of opportunity has social consequences (e.g. higher bid-ask-spread, higher transaction cost, and lower trade volume in the capital market) to both informed and uninformed investors as well as to society at large (Lev, 1988). These social consequences arise from the protective strategies adopted by less-informed investors when trading with informed sellers. For example, to protect themselves from informed investors, uninformed investors may invest in well-diversified portfolios for the long-term. They may also prohibit insiders like managers, through legal or contractual arrangements, from buying the shares of their own firms. In extreme cases, uninformed investors may withdraw from trading in a specific security, or from the market entirely.

### **INSERT FIGURE 1 HERE**

This study employs the public accountability model of accounting regulation (Tower, 1993) to theorize the effect of the adoption and enforcement of IFRS on accounting quality in Nigeria. This model of accounting regulation consists of three elements: production (fiduciary duty to report to all relevant stakeholders), public accountability (informational equity and efficiency), and regulation (IFRS adoption and enforcement). The regulatory institution (the

FRCN) comprises various stakeholders (wide democratic representation). In performing its duty, the FRCN needs to take inputs from all stakeholders and consider 'management preferences' by looking at the cost-benefit of a particular regulatory strategy to the listed companies. Regarding the preferences of the management, the regulatory body needs to take cognizance of the frequency of the reports required from the management (e.g. the preparation of quarterly and annual reports) and the quality of expected communication (e.g. extent of disclosure).

We argue that the FRCN took into consideration the interests of both external and internal stakeholders when instituting regulation, as indicated by the wide composition of representatives (see Footnote 5). This arrangement led the FRCN to stipulate monitoring procedures for ensuring compliance with accounting standards (SAS and later, IFRS) (i.e., rules governing preparation). The outcome of this process is that public accountability is ensured, as evidenced by appropriate levels of production of information (informational efficiency) through the adoption of IFRS, which requires higher disclosures than the Nigerian GAAP, and equal access to information (informational equity) for all stakeholders, which is guaranteed by the FRCN's monitoring procedures. This outcome also ensures that the information produced by Nigerian listed firms meets the various needs of financial statement users in assessing firms' conservatism and their earnings management behaviour (e.g. using discretionary accrual models and abnormal working capital accrual as proxies), as well as the persistence of their earnings. "Higher quality earnings provide more information about the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker." (Dechow, Ge, & Schrand, 2010, p. 344) Consequently, accounting regulation should reduce earnings management and improve timely loss recognition as well as earnings persistence of Nigerian listed firms.

### ***3.2 Review of prior studies and the development of hypotheses***

#### ***3.2.1 IFRS adoption and earnings management***

The impact of IFRS adoption on earnings management has remained mixed. Based on cross-country studies, Barth, Landsman, and Lang (2008) and Chen, Tang, Jiang, and Lin (2010) found IFRS adoption to be associated with reduced earnings management. On the other hand, Houqe, Van Zijl, Dunstan, and Karim (2012) found that adoption of IFRS without an increase in the degree of investor protection did not improve earnings quality. Callao and Jarne (2010), and Kabir, Laswad, and Islam (2010), observed an increase in earnings management following IFRS adoption in the EU, and in New Zealand and Australia, respectively. More recently, Capkun, Collins, and Jeanjean (2016) concluded in their study of 29 countries that adjustments made to IFRS in 2005 increased earnings management. They attribute this finding to the increased flexibility provided by the 2005 IFRS amendments.

In single-country contexts, Iatridis and Rouvolis (2010), Chua, Cheong, and Gould (2012), and Wan Ismail, Kamarudin, Van Zijl, and Dunstan (2013), all found IFRS adoption to be associated with lower earnings management in Greece, Australia, and Malaysia, respectively. In China, Zhou, Xiong, and Ganguli (2009), Liu, Yao, Hiu, and Liu (2011), and Ho, Liao, and Taylor (2015) found IFRS adoption to be associated with reduced earnings management. In Germany, Christensen, Lee, Walker, and Zeng (2015) observed a reduction in earnings management practices for firms that voluntarily adopted IFRS, but not for the mandatory adopters of IFRS; thus, they concluded that incentives to improve accounting quality rather than IFRS adoption lead to improved accounting quality. In Brazil, Lourenco, Branco, and Curto (2015) found that when some IFRS were used with Brazilian GAAP (2008 to 2009), there was no decrease in earnings management, but full adoption of IFRS (2010 to 2011) reduced earnings management. This result is substantiated by the recent similar findings of Eng, Lin, and Figueiredo (2018).

In contrast, Jeanjean and Stolowy (2008), and both van Tendeloo and Vanstraelen (2005) and Paananen and Lin (2009), found that adoption of IFRS increased earnings management in France and Germany, respectively. Other studies in Australia (Bryce, Ali, & Mather, 2015), Canada (Burnett, Gordon, Jorgensen, & Linthicum, 2015; Liu & Sun, 2015), Egypt (Elbannan, 2011) and China (Wang & Campbell, 2012) observed no significant reduction in earnings management as a result of IFRS adoption. Ahmed, Neel, and Wang (2013) found that IFRS adoption increased income smoothing and aggressive reporting of accruals, and Doukakis (2014) concluded that mandatory IFRS adoption had no significant impact on both accrual and real earnings management.

In the case of Nigeria, the increased enforcement of IFRS by the FRCN led to the sanctioning of auditors and erring firms, as in the case of Stanbic IBTC bank<sup>7</sup>. An assessment of the FRCN's financial reports further shows an increasing trend in penalties levied for accounting errors. Based on these enforcement activities of the FRCN, we conjecture that the adoption of IFRS would reduce earnings management practices of Nigerian listed firms. Hence, our first hypothesis is as follows:

*H<sub>1</sub>: IFRS adoption significantly reduces the earnings management behaviour of Nigerian listed firms.*

### *3.2.2 IFRS adoption and timely loss recognition (conditional conservatism)*

Several studies conducted in different countries have concluded that IAS/IFRS adoption leads to more timely recognition of losses (Barth et al., 2008; Chua et al., 2012; Hung & Subramanyam, 2007; Chan, Hsu, & Lee, 2015).

In contrast, other studies have found a decline in timely loss recognition subsequent to IFRS adoption (Andre, Filip, & Paugam, 2015; Cameran et al., 2014; Elshandidy & Hassanein, 2014; Lai, Lu, & Shan, 2013; Piot, Dumontier, & Janin, 2010; Paananen & Lin, 2009). In the

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<sup>7</sup> <https://drive.google.com/file/d/0BxB1-bqclt35aHh2OXBFNFBneWM/view>

US, Chen et al. (2010) observed a negative relationship between IFRS adoption and timely loss recognition, while in China, Zhou, Xiong, and Ganguli (2009) found no association between IFRS adoption and timely loss recognition.

The adoption of IFRS in Nigeria increased the disclosure of information for various stakeholders, including debtholders, more than the Nigerian SAS (World Bank, 2011). For example, the recognition of impairments implies that IFRS discourages overstating asset values above the recoverable amount. Therefore, we predict that the adoption of IFRS would improve timely loss recognition by Nigerian listed firms. Our second hypothesis is thus as follows:

***H<sub>2</sub>: IFRS adoption significantly increases timely loss recognition by Nigerian listed firms.***

### *3.2.3 IFRS adoption and earnings persistence*

Sun, Cahan, and Emanuel (2011) examined the effect of IFRS adoption on earnings persistence among cross-listed foreign firms in the US. They found that IFRS adoption was associated with higher earnings persistence across the 23 countries in their sample. Similar findings have been observed in Australia (Chalmers, Clinch, & Godfrey, 2011) and Canada (Liu & Sun, 2015).

In contrast, Atwood, Drake, Myers, and Myers (2011) found no difference in the persistence of earnings reported under IFRS and US GAAP, but IFRS losses were less persistent than US GAAP losses. Doukakis (2010) and Lai, Li, Shan, and Taylor (2013) examined the impact of IFRS adoption on earnings persistence in Greece and Australia, respectively. They found that IFRS did not affect the persistence of earnings. Kabir and Laswad (2010) investigated the power of the current year earnings in predicting the one-year future cashflow after IFRS adoption in New Zealand, and concluded that IFRS did not improve the predictive power of earnings on cashflow.

IFRS facilitates the disclosure of information that did not have to be disclosed under the Nigeria SAS (World Bank, 2011). As this disclosure would facilitate better evaluation of

the persistence of earnings of Nigerian listed firms under IFRS when compared to the Nigerian SAS, we expect a positive effect of IFRS enforcement on the persistence of earnings of Nigerian listed firms. Our third hypothesis is as follows:

*H<sub>3</sub>: IFRS adoption significantly increases earnings persistence of Nigerian listed firms.*

#### **4. Data, Accounting Quality Models, and Regression Analysis**

We are interested in the effects of enforcement of IFRS on accounting quality in Nigeria covering the period 2009 to 2014, which is three years before and after the adoption of IFRS (as used in previous studies). We measured accounting quality from three dimensions that have been widely used in contemporary accounting research; namely, earnings management, timely loss recognition, and earnings persistence (Dechow & Schrand, 2010). The total population of firms listed on the NSE in 2016 was 179, and our sample consists of only the non-financial firms listed on the NSE in 2016. In line with past studies (e.g. Gebhardt & Novotny-Farkas, 2012; Gombola, Ho, & Huang, 2016), we excluded financial firms because they face both different regulations (e.g. the *Banks and Other Financial Institutions Act (BOFIA) 2004* and the Central Bank of Nigeria guidelines) and further monitoring by the CBN and the National Insurance Commission (NAICOM). We also excluded those firms without financial statements for the period 2009 to 2011 (prior to IFRS adoption), as at least one-year data in this period was needed for comparative purposes. Taking these steps, we arrived at a final sample of 83 listed non-financial companies<sup>8</sup>, as shown in Table 1.

**INSERT TABLE 1 HERE**

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<sup>8</sup> Our sample of 83 firms compares reasonably with the samples of similar prior studies (e.g. Bova & Pereira, 2012; Houqe, Monem, & van Zijl, 2015; Eng, Lin, & De Figueiredo, 2019).

Data for this study were hand-collected from the annual reports and financial statements of the sampled companies, which were downloaded from the African Markets (AM)<sup>9</sup>. We obtained the few financial statements missing from the AM website either from the NSE's archive or the companies' own websites. The variables extracted manually follow the same definitions of variables adopted in previous studies that used common databases.

#### 4.1 Earnings management models

There are no best ways of measuring earnings management, and there are many proxies used in the literature (Dechow & Schrand, 2010). In line with the majority of IFRS-related studies, we adopted the popular discretionary accrual model of Dechow, Sloan, and Sweeney (1995), which is a modification of Jones' (1991) model. We also used the abnormal working capital accrual (AWCA) of DeFond and Park (2001) as an alternative measure of earnings management. As suggested by Bar-Yosef and Prencipe (2013), the AWCA model provides a more reliable estimate for fewer observations than the discretionary accrual models. Both variants of earnings management models are explained below:

##### 4.1.1 Discretionary accrual based on the modified Jones model<sup>10</sup>

Our first earnings management proxy is the modified Jones model of Dechow et al. (1995). The discretionary accrual (DA) is the difference between total accrual (TA) and the non-discretionary accrual (NDA). We took the following steps in estimating the discretionary accrual.

First, we estimated the modified Jones model as in Equation 1 below:

$$\frac{TACC_{it}}{TA_{it-1}} = \alpha_j \left[ \frac{1}{TA_{it-1}} \right] + \delta_{1j} \left( \frac{\Delta SALES_{it}}{TA_{it-1}} - \frac{\Delta AR_{it}}{TA_{it-1}} \right) + \delta_{2j} \left[ \frac{PPE_{it}}{TA_{it-1}} \right] + \varepsilon_{it} \quad (1)$$

<sup>9</sup> A website that provides financial statements of African companies and their market data.

<sup>10</sup> The majority of the previous studies used the modified Jones model. For comparability, we adopted the same model (Christensen, Lee, Walker, & Zeng, 2015). Furthermore, Dechow and Schrand (2010) argued that the alternative Kothari, Leone, and Wasley's (2005) model that is commonly adopted should be used when performance is an issue.



Where:

$TACC_{it}$  = difference between net income before extraordinary items and cashflow from operations for firm  $i$  in year  $t$ ;

$TA_{it-1}$  = total assets for firm  $i$  in year  $t-1$ ;

$\Delta SALES_{it}$  = change in sales for firm  $i$  in year  $t$ , derived by  $Sales_t - Sales_{t-1}$ ;

$\Delta AR_{it}$  = change in account receivables for firm  $i$  in year  $t$ , derived by  $AR_t - AR_{t-1}$ ;

$PPE_{it}$  = property plant and equipment for firm  $i$  in year  $t$ .

Second, we found the non-discretionary accrual (NDA) by estimating the following regression equation (Equation 2):

$$NDA_{it} = \alpha_j \left[ \frac{1}{TA_{it-1}} \right] + \delta_{1j} \left( \frac{\Delta SALES_{it}}{TA_{it-1}} - \frac{\Delta AR_{it}}{TA_{it-1}} \right) + \delta_{2j} \left[ \frac{PPE_{it}}{TA_{it-1}} \right] \quad (2)$$

Third, we computed the discretionary accrual by subtracting NDA from TACC, thus (Equation 3):

$$DA_{it} = TACC_{it} - NDA_{it} \quad (3)$$

The discretionary accrual was then regressed on IFRS adoption and other control variables in the full model below (Equation 4):

$$|DA|_{it} = \delta_0 + \delta_1 IFRS_{it} + \delta_2 SIZE_{it} + \delta_3 LEV_{it} + \delta_4 CFO_{it} + \delta_5 AUQ_{it} + \delta_6 ROA_{it} + \delta_7 EISSUE_{it} + \delta_8 DISSUE_{it} + \varepsilon_{it} \quad (4)$$

Where:

$|DA|_{it}$  = discretionary accrual for firm  $i$  at period  $t$ ;

$IFRS_{it}$  = binary variable, 1 for periods after IFRS adoption (2012-2014) and 0 for periods before IFRS adoption (2009-2011) for firm  $i$ ;

According to  $H_1$ , we expect a negative relationship between IFRS adoption and discretionary accruals, i.e.  $\delta_1 < 0$ .

Other control variables in line with previous studies (Barth, Landsman, & Lang, 2008; Zeghal, Chtourou, & Fourati, 2012; Christensen et al., 2015) include:

$SIZE_{it}$  = company size measured as the log of total assets of firm  $i$  at period  $t$ ;

$LEV_{it}$  = leverage measured as total debt divided by total assets of firm  $i$  at period  $t$ ;

$CFO_{it}$  = cashflow from the operation of firm  $i$  at period  $t$ ;

$AUQ_{it}$  = audit quality measured as 1 for Big 4 audit firms and 0 for non-Big 4 audit firms for firm  $i$  at period  $t$ ;

$ROA_{it}$  = profitability measured as a ratio of returns to total assets of firm  $i$  at period  $t$ ;

$EISSUE_{it}$  = binary variable, 1 for new equity issue and 0 for no equity issued by firm  $i$  at period  $t$ ;

$DISSUE_{it}$  = binary variable, 1 for new debt issue and 0 for no debt issue by firm  $i$  at period  $t$ .

#### 4.1.2 Abnormal working capital accrual model

The abnormal working capital accrual was estimated as in Equation 5 below:

$$AWCA_t = WC_t - \left[ \left( \frac{WC_{t-1}}{T_{t-1}} \right) \times T_t \right] \quad (5)$$

Where:

$AWCA_t$  = abnormal working capital accrual for period  $t$ ;

$WC_t$  = non-cash working capital for year  $t$  (i.e. current assets – cash-short-term investments) – (current liabilities–short-term debt);

$T_t$  = turnover (sales) for year  $t$ ;

$T_{t-1}$  = turnover (sales) for year  $t-1$ ;

$WC_{t-1}$  = non-cash working capital for year  $t-1$ .

As in the modified Jones model, the AWCA was regressed on IFRS adoption and other control variables as defined in the modified Jones model. Thus, the full model (Bar-Yosef & Prencipe, 2013) is:

$$AWCA_{it} = \delta_0 + \delta_1 IFRS_{it} + \delta_2 SIZE_{it} + \delta_3 LEV_{it} + \delta_4 CFO_{it} + \delta_5 AUQ_{it} + \delta_6 ROA_{it} + \delta_7 EISSUE_{it} + \delta_8 DISSUE_{it} + \varepsilon_{it} \quad (6)$$

According to  $H_1$ , we expect a negative relationship between IFRS adoption and AWCA, i.e.  $\delta_1 < 0$ .

All other variables are as previously defined in Equation 4.

#### 4.2 Timely loss recognition model

We adopted the timely loss recognition model of Lang, Ready, and Wilson (2006) as used in previous studies (Barth, Landsman, & Lang, 2008; Christensen et al., 2015). Our timely loss recognition model is as follows:

$$LL_{it} = \delta_0 + \delta_1 IFRS_{it} + \delta_2 SIZE_{it} + \delta_3 LEV_{it} + \delta_4 CFO_{it} + \delta_5 AUQ_{it} + \delta_6 ROA_{it} + \delta_7 EISSUE_{it} + \delta_8 DISSUE_{it} + \varepsilon_{it} \quad (7)$$

Where:  $LL_{it}$  = large amount of loss is a binary variable measured as 1 where net income scaled by total asset is less than -0.20 and 0 otherwise (Lang et al., 2006; Barth et al., 2008).

According to  $H_2$ , we expect a positive relationship between IFRS adoption and large losses, i.e.  $\delta_1 > 0$ .

All independent variables are as previously defined in Equation 4.

#### 4.3 Earnings persistence model

Another dimension of accounting quality is the persistence of earnings (Francis, LaFond, Olsson, & Schipper, 2004) formulated by Sloan (1996). Persistence of earnings implies the ability of the current year's earnings to predict the earnings one year ahead (Schipper & Vincent, 2003) and serves as an important earnings characteristic for equity valuation (Dechow & Schrand, 2010). The earnings persistence model (Liu & Sun, 2015) is as follows:

$$EPS_{it+1} = \alpha_{it} + \delta_1 IFRS_{it} + \delta_2 EPS_{it} + \delta_3 IFRS \times EPS_{it} + \varepsilon_{it} \quad (8)$$

Where:  $EPS_{it+1}$  = earnings per share for firm  $i$  in year  $t+1$ ;

$EPS_{it}$  = earnings per share for firm  $i$  in year  $t$ ;

$IFRS$  = dummy variable, 1 for periods after IFRS adoption (2012-2014) and 0 for periods before IFRS adoption (2009-2011) for firm  $i$ ;

$IFRS \times EPS_{it}$  = interaction term for IFRS and  $EPS_{it}$ .

The earnings persistence model is an autoregressive model, which implies a dynamic panel model since one of the independent variables is the lag of the dependent variable (Cameron & Trivedi, 2009).

According to H<sub>3</sub>, we expect a positive relationship between IFRS adoption and  $EPS_{it+1}$ , i.e.  $\delta_3 > 0$ .

#### *4.4 Regression analysis*

Panel regression models were used for the MJM and AWCA models. We used the fixed-effects model for the MJM, as the Hausman test indicated no difference between the coefficients of the fixed- and random-effects models ( $p$ -value is 0.000). For the AWCA, the Hausman test supported the random-effects model ( $p$ -value is 0.3310). We further conducted the Breusch-Pagan Lagrange Multiplier test in order to test the existence of a random effect; this resulted in a  $p$ -value of 0.000, thus confirming the appropriateness of the random-effects model. A modified Wald test for group-wise heteroscedasticity was conducted, and the null hypothesis of constant variance was rejected at the 1% level of significance, implying the presence of heteroscedasticity. To control for this, the standard errors were clustered to obtain heteroscedasticity-robust standard errors using Huber-White estimation.

A logistic regression model was estimated for the timely loss recognition model following Barth, Landsman, and Lang (2008) and Christensen et al. (2015). The standard errors were clustered using Huber-White estimation. For the earnings persistence model, a system-generalized method of moments (i.e. System GMM) was estimated, since one of the independent variables was a lag of the dependent variable. The “Arellano-Bond test for zero autocorrelation in first-differenced error” (Cameron & Trivedi, 2009, p. 294) was conducted. The  $p$  values for the test were 0.012 and 0.334, respectively for orders 1 and 2, suggesting no autocorrelation at higher orders. The Hansen test for over-identifying restrictions gave a  $p$ -value of 0.579, suggesting the validity of the instrument.

## 5. Descriptive Statistics, Results and Discussion

### 5.1 Descriptive statistics

Table 2 presents the descriptive statistics for all the variables before and after IFRS adoption. The statistical significance of the differences in the means of the variables was tested using t-test (parametric) and Wilcoxon rank-sum test (nonparametric). As can be seen in Table 2, there are some differences (but not statistically significant) in the mean values for all four proxies of earnings quality in the pre- and post-IFRS period. The mean for DA is smaller, while the mean for AWCA is larger in the post-IFRS adoption period, suggesting that the switch to IFRS may have given companies an opportunity to substitute a short-term earnings management strategy (AWCA) for a long-term strategy (DA). The increase in the average TACC post-IFRS adoption implies an increase in NDA, which supports the argument that AWCA was substituted for DA. Large losses (LL) are recognized more in the post-IFRS adoption period, which corresponds with a significant increase in the new issue of debt capital. This confirms the assertion of Watt (2003) that timely loss recognition is useful accounting information for debtholders. As for earnings per share (EPS), the mean figure is slightly lower in the post-IFRS period, and this may be attributed to more expenses being recognized under IFRS as compared to the Nigerian SAS (e.g. impairments).

The mean company size increased following IFRS adoption and corresponds to the increase in the average total assets in the post-IFRS period. Although not significantly different, the mean cashflow from operations (CFO) increased in the post-IFRS period, possibly due to the increased total assets, which generate more cashflow from operations. The mean return on assets (ROA) significantly reduced post-IFRS adoption. This is likely due to the significant increase in the average value of total assets in the post-IFRS period. The mean leverage is higher but not significantly different in the post-IFRS period, corresponding to the increase in new debt issue (DISSUE). The significant reduction in the new equity issue may be a result of

debt capital being substituted for it. There is a slight reduction in the use of the Big 4 audit firms following IFRS adoption, probably due to the increased cost of employing a Big 4 audit firm<sup>11</sup>. The mean for change in turnover slightly increased in the post-IFRS period. The reduction in the mean for change in accounts receivables, and an increase in operating cashflows, reflect the possibility that cash sales increased post-IFRS adoption. The mean for PPE and total assets significantly increased in the post-IFRS period.

### **INSERT TABLE 2 HERE**

Table 3 presents the correlation results between variables used in the four accounting quality models (i.e. DA, AWCA, Timely Loss Recognition, and Earnings Persistence). The results indicate no multicollinearity problem among the variables, as no two variables used together in a model have a correlation of more than 0.8 (Field, 2014).

### **INSERT TABLE 3 HERE**

#### *5.2 Results*

Table 4 presents the results for the four models of accounting quality. The variable IFRS is significantly positive at 1% for the MJM, indicating that adoption of IFRS did not reduce earnings management of Nigerian listed firms but rather increased it. Thus, contrary to our expectation,  $H_1$  is not accepted. However, this result is consistent with the findings of Capkun et al. (2016), who argued that the 2005 amendments made by the IASB to IFRS increased the ability of managers to use discretion in reporting, which consequently increased their earnings management behaviour. Similarly, the recent findings of Mongrut and Winkelried (2018) show

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<sup>11</sup> We observe that some listed companies shifted to employing midsize audit firms like PKF and BDO following IFRS adoption.

that, in emerging economies, IFRS adoption may have the unintended consequence of increasing earnings opacity rather than reducing it. Prior studies that have found similar results include van Tendeloo and Vanstraelen (2005), Jeanjean and Stolowy (2008), Callao and Jarne (2010), and Kabir and Laswad (2010).

#### **INSERT TABLE 4 HERE**

IFRS adoption does not have a significant effect on AWCA manipulation; however, the relationship is positive. Overall, our results show that IFRS adoption has not achieved the desired goal of improving accounting quality in Nigeria.

In the timely loss recognition model, IFRS adoption significantly reduced timely loss recognition by Nigerian listed firms at the 1% level of significance<sup>12</sup>. Therefore, H<sub>2</sub>, contrary to our expectation, is also not accepted. This result is equally consistent with prior studies that found a decrease in timely loss recognition post-IFRS adoption (Andre, Filip, & Pauga, 2015; Cameran, Campa, & Pettinicchio, 2014; Elshandidy & Hassanein, 2014; Lai, Lu, & Shan., 2013; Piot, Janin, & Dumontier, 2010; Paananen & Lin, 2009).

Finally, in the earnings persistence model, the interactive variable between IFRS and EPS is negatively associated with one-year future earnings ( $EPS_{t+1}$ ) and is significant at the 5% level of significance. Thus, H<sub>3</sub>, contrary to our expectation, is also not accepted. This provides further evidence that adoption of IFRS did not enhance accounting quality in Nigeria.

Consistent with Marra and Mazzola (2012) and Zeghal et al. (2012), CFO has a negative effect on discretionary accrual. Highly geared firms seem to manipulate AWCA, probably in order not to violate debt covenants. Similarly, size and cashflow from operations have

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<sup>12</sup> We suggest that this result be interpreted with caution as we did not control for some other macro factors, due to unavailability of data, which may affect changes in the recognition of large losses.

significant positive relationships with AWCA (Dimitropoulos, Asteriou, Kousenidis, & Leventis, 2013). New issue of shares is negatively related to AWCA, suggesting that Nigerian firms reduced the manipulation of working capital accrual, perhaps due to more scrutiny when they issued new shares on the NSE.

For the timely loss recognition model, leverage has a significant and positive relationship with large losses, thus supporting the argument that debtholders are interested in the debt-paying ability of a firm when all possible losses are accounted for. However, ROA and size reduced timely loss recognition (Zeghal et al., 2012). Leverage increased timely loss recognition, supporting the argument that debtholders are more interested in the prudence of a firm.

## **6. Conclusion**

This study examines the effect of IFRS adoption on accounting quality in Nigeria after the enforcement of accounting standards had already improved through the establishment of the FRCN. The adoption of IFRS following the strengthening of accounting standards enforcement was made on the recommendation of the World Bank to ameliorate the country's ailing financial reporting architecture that was hitherto riddled with abysmal irregularities. However, contrary to this expectation, accounting quality reduced in the post-IFRS adoption period. While IFRS adoption might have encouraged improvement in accounting quality in other jurisdictions, our findings show that the one-size-fits-all approach by the World Bank may have had unintended consequences in Nigeria.



Our results can be explained by the high level of corruption in Nigeria<sup>13</sup> (Pring, 2015). Despite enforcement improvements, accounting irregularities are still commonplace<sup>14</sup>. The enforcement improvements will take time before eventually manifesting themselves in higher accounting quality. Furthermore, changes introduced into IFRS from 2005 (Capkun et al., 2016) allowed greater managerial discretion and accounting choices, increasing the avenues available for accounting malpractice. For example, IFRS 13 prescribes the use of IFRS at three levels, where levels 2 and 3 are driven by judgement. In Nigeria, where active markets are non-existent, the determination of fair value at level 3 may be common, which leaves room for managerial opportunism. Ball, Li, and Shivakumar (2015) found that IFRS reduced contractibility of accounting information through increased accounting choices, rule-making uncertainty, and increased use of fair value accounting. This explains our result of reduced timely recognition of losses under IFRS. The decrease in earnings persistence post-IFRS adoption can be explained by the increased use of fair value accounting and IFRS-based expenses that are subject to annual reviews (e.g. impairment). These items make the predictability of earnings difficult.

An increase in earnings management implies that financial statements information may not be reliable and may lead to inaccurate valuation of companies on the stock market. Similarly, lower timely loss recognition means that the contractibility of financial statements information may have reduced. The reduced earnings persistence signals an increasing difficulty in the valuation of companies, as past earnings do not reflect an accurate dimension of future earnings.

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<sup>13</sup> Cieslewicz (2014) argues that accounting is affected by the level of corruption in a country, and some empirical studies on the impact of IFRS on capital market outcomes do agree with this assertion (e.g. Amiram, 2012; Florou & Pope, 2012; Nnadi & Soobaroyen, 2015).

<sup>14</sup> For example, the case of Stanbic IBTC bank, the recent accounting irregularities among other malpractices in Oando Plc (<https://www.proshareng.com/news/Frauds%20&%20Scandals/Review-of-the-SEC-Technical-Committee-Recommendations--Opinion-and-Final-Report/37588>) and Skye Bank Plc (<https://www.dailytrust.com.ng/what-you-should-know-about-the-transmutation-of-skye-to-polaris-bank.html>) all show that accounting irregularities are still rife in Nigeria.

The findings of this study have some important policy implications. Firstly, the study highlights the importance of considering the institutional setting of a country prior to its adoption of IFRS in solving problems associated with market failures. Particularly in a country like Nigeria, where accounting irregularities are rife and other macro-institutional structures (e.g. the rule of law) are weak, a strong enforcement institution rather than IFRS adoption is more important in facilitating improved accounting quality. Furthermore, this study reveals that the effect of IFRS adoption on accounting quality may not be limited by the extent of divergence of a country's national GAAP from IFRS, as argued by Cai et al. (2014). This is because the Nigerian SAS has a low divergence from IFRS (World Bank, 2011), but the effect of IFRS in reducing accounting quality is significant. Since enormous cost and effort have been put into IFRS adoption and enforcement in Nigeria, a reversal of these steps may not be feasible and may be more costly. Hence, regulatory bodies, such as the FRCN, need to identify specific aspects in IFRS that may be exploited in manipulating accounts so that these aspects are amended to suit the Nigerian environment where managerial opportunism is high. Additionally, more stringent measures against any corporate official that engages in accounting malpractices should be adopted to deter other potential miscreants. Countries with similar institutional settings to Nigeria will find the results of this study a valuable input in making informed policies in regulating their financial reporting regimes.

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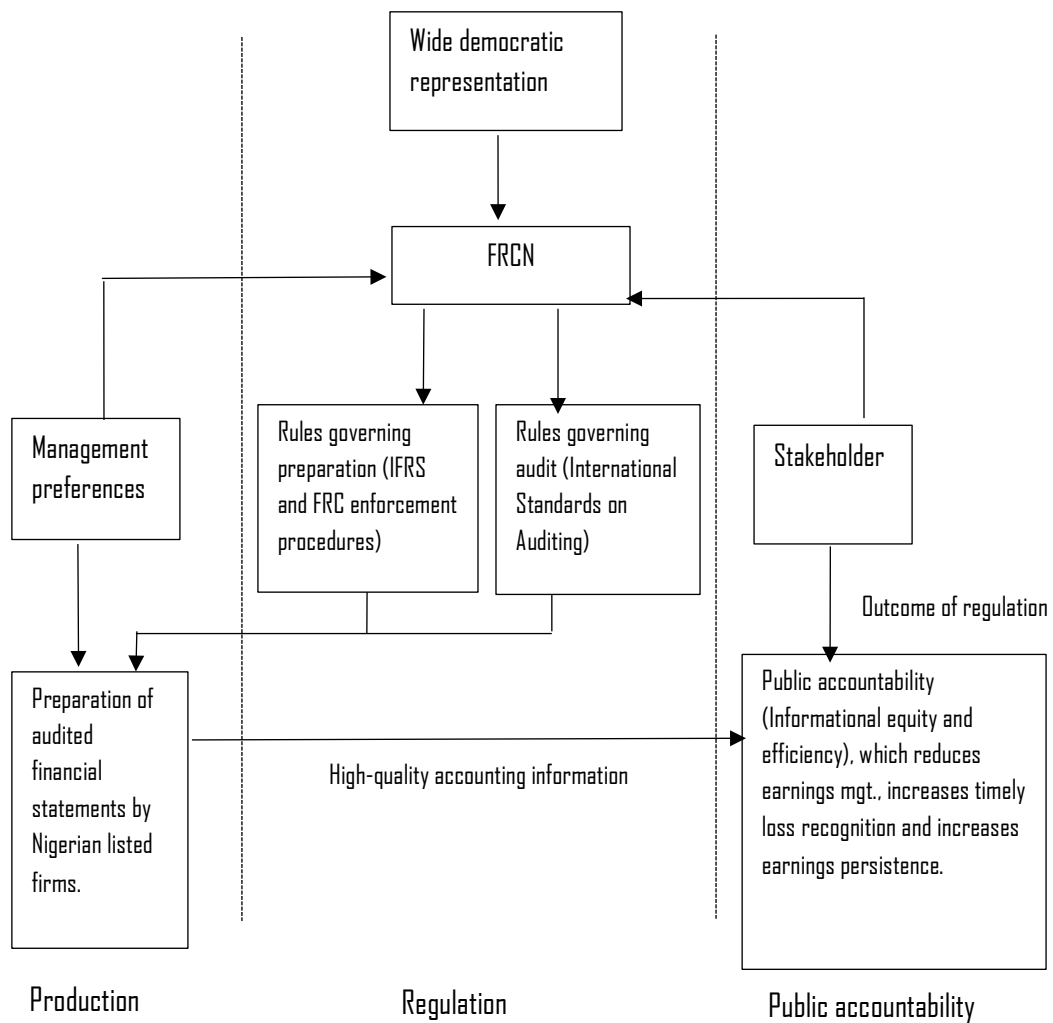
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**Figure 1 Public Accountability Model of Accounting Regulation**



**Source:** adapted from Tower (1993)



**Table 1 Sample**

<b><i>Panel A: Sample Selection Criteria</i></b>		<b><i>Number of firms</i></b>	
Total number of firms listed as at 2016 (population)		179	
Less financial services firms		(55)	
Total non-financial services firms		124	
No. of firms without financial statements for the period 2009-2011		(41)	
<b>Final sample</b>		<b>83</b>	
<b><i>Panel B: Industrial Classification</i></b>		<b><i>Sample size</i></b>	<b><i>(%)</i></b>
Agriculture		4	(4.82)
Conglomerates		4	(4.82)
Construction/Real Estate		5	(6.02)
Consumer Goods		20	(24.10)
Healthcare and Services		22	(26.50)
Information and Communications Technology		4	(4.82)
Industrial Goods		12	(14.46)
Natural Resources and Oil and Gas		12	(14.46)
<b>Total</b>		<b>83</b>	<b>(100)</b>

**Table 2 Descriptive statistics of variables before and after IFRS adoption**

Variables	Pre-IFRS adoption					Post-IFRS adoption					Univariate analysis	
	Obs.	Min	Max	Mean	Std. Dev	Obs.	Min	Max	Mean	Std. Dev	T-test	Wilcoxon rank-sum test
DA	229	0.008	0.389	0.124	0.074	238	0.008	0.389	0.115	0.065	0.159	0.261
AWCA	236	2.106	38900	3027	6010	237	2.106	38900	3201	6428	0.680	0.941
LL	237	0	1	0.186	0.384	236	0	1	0.212	0.414	0.476	0.476
EPSt <sub>t</sub>	238	-2.54	26.67	1.55	3.49	227	-15.49	28.08	1.51	4.04	0.382	0.644
SIZE	240	11.66	20.08	16.12	1.60	240	11.66	20.19	16.42	1.69	0.045**	0.057*
CFO	235	-8.43	95.17	4.24	11.19	238	-8.43	95.17	5.87	15.18	0.145	0.284
ROA	237	-0.259	0.393	0.101	0.107	240	-0.259	.393	0.071	0.110	0.012**	0.031**
LEV	240	0.117	1.504	0.584	0.240	240	.117	1.50	0.610	0.233	0.2731	0.245
DISSUE	242	0	1	0.302	0.460	239	0	1	0.385	0.488	0.073*	0.072*
EISSUE	242	0	1	0.041	0.199	240	0	1	0.021	0.143	0.072*	0.072*
AUD	237	0	1	0.637	0.482	240	0	1	0.592	0.493	0.241	0.241
TACC	241	0.983	112000	3278	9268	240	390	94300	3492	9542	0.783	0.409
ΔSALES	236	-272000	208000	4578	182000	238	-223000	107000	2499	20500	0.257	0.012**
ΔAccRec.	227	-16500	26000	873	3651	238	-20300	30700	765	5164	0.797	0.219
PPE	240	3.561	349000	15500	41300	240	5700	748000	26000	72000	0.049**	0.051*
TA	240	86.224	526000	33800	69600	240	108.08	985000	55000	129000	0.024**	0.057**

DA=discretionary accrual, AWCA= abnormal working capital accrual, LL = large losses, EPS = earnings per share, SIZE = company size, CFO = cash flow from operations, ROA = return on assets, LEV = leverage, DISSUE = new debt issue, EISSUE = new equity issue and AUD = audit, TACC = total accruals, ΔSALES = change in sales, ΔAccRec. = change in account receivables, PPE = property plant and equipment, TA = total assets.

\*\*\* sig. at 1%, \*\* sig. at 5%\*, sig. at 10%

**Table 3 Pairwise correlation of all variables used for all models**

	EPS	EPS <sub>t-1</sub>	LL	AWCA	ROA	SIZE	DA	LEV	IFRS	PPE	EISSUE	DISSUE	IFRSEPS	AUD	ΔSALES	ΔACCREC	TA	CFO	
EPS	1																		
EPS <sub>t</sub>	0.843***	1																	
LL	-0.282***	-0.244***	1																
AWCA	0.268***	0.241***	-0.029	1															
ROA	0.372***	0.353***	-0.510***	-0.008	1														
SIZE	0.416***	0.387***	-0.166***	0.410***	0.091	1													
DA	0.145**	0.130**	-0.001	0.105*	0.037	0.096*	1												
LEV	-0.007	0.027	0.326***	0.125**	-0.251***	0.013	0.0003	1											
IFRS	0.031	-0.021	0.007	-0.010	-0.092	0.072	-0.074	0.050	1										
PPE	0.397***	0.392***	-0.092	0.436***	0.125**	0.571***	0.261***	-0.050	0.090	1									
EISSUE	-0.053	0.008	0.091	-0.029	-0.059	0.063	0.046	0.045	-0.079	0.00462	1								
DISSUE	-0.048	-0.028	0.027	0.044	-0.057	0.162***	0.121*	-0.030	0.0609	0.165***	0.033	1							
IFRSEPS	0.711***	0.524***	-0.187***	0.128**	0.231***	0.290***	0.050	-0.055	0.328***	0.355***	-0.046	-0.0006	1						
AUD	0.209***	0.192***	-0.073	0.148**	0.112*	0.358***	-0.009	0.117*	-0.070	0.204***	0.007	-0.054	0.091	1					
ΔSALES	0.271***	0.302***	-0.113*	0.163***	0.112*	0.263***	0.356***	-0.015	-0.052	0.325***	0.128**	0.109*	0.191***	0.115*	1				
ΔACCREC	0.133**	0.101*	-0.088	0.123*	0.038	0.250***	0.016	0.045	-0.008	0.129**	0.015	0.025	0.130**	0.0743	0.0624	1			
TA	0.384***	0.356***	-0.096*	0.520***	0.081	0.653***	0.167***	-0.001	0.103*	0.940***	0.017	0.142**	0.336***	0.230***	0.278***	0.196***	1		
CFO	0.416***	0.407***	-0.117*	0.331***	0.203***	0.416***	-0.042	-0.086	0.068	0.773***	-0.037	0.105*	0.406***	0.150**	0.215***	-0.008	0.691***	1	

DA =discretionary accrual, AWCA= abnormal working capital accrual, LL = large losses, EPS = earnings per share, Size = company size, CFO = cash flow from operations, ROA = return on assets, LEV = leverage, DISSUE = new debt issue, EISSUE = new equity issue and AUD = audit, ΔSALES = change in sales, ΔAccRec. = change in account receivables, PPE = property plant and equipment, TA = total assets.

\*\*\*, \*\*, \* imply significance levels of 1%, 5%, and 10% respectively.

**Table 4 Regression Results**

Variables	H <sub>1</sub> : MJM (Fixed Effects)		H <sub>1</sub> : AWCA Model (Random Effects)		H <sub>2</sub> : Timely Loss Recognition (Binary Logistic Regression)		H <sub>3</sub> : Earnings Persistence (System GMM)	
	Coefficient ( <i>p</i> value)	<i>t</i> value	Coefficient ( <i>p</i> value)	<i>t</i> value	Coefficient ( <i>p</i> value)	<i>t</i> value	Coefficient ( <i>p</i> value)	<i>z</i> value
Constant	-0.306 (0.342)	-0.96	-3.100 (0.001)***	-3.39	2.924 (0.121)	1.55	-2.6781* (0.094)	-1.67
Lev	0.015 (0.607)	0.52	5.450 (0.050)**	1.96	2.925 (0.001)***	3.38		
ROA	0.040 (0.386)	0.87	-3.245 (0.139)	-1.48	-22.225 (0.000)***	-7.10		
Size	0.028 (0.162)	1.41	2.040 (0.001)***	3.29	-0.330 (0.004)***	-2.87		
IFRS	0.096 (0.000)***	4.48	-2.243 (0.544)	-0.61	-13.899 (0.000)***	-11.10	6.1047 (0.048)**	1.97
Eissue	0.003 (0.987)	0.02	-5.603 (0.061)*	-1.87	0.486 (0.409)	0.83		
Dissue	-0.005 (0.630)	-0.48	-5.212 (0.439)	-0.77	0.333 (0.384)	0.87		
Audit	0.008 (0.433)	0.79	2.125 (0.739)	0.33	-0.154 (0.708)	-0.37		
CFO	-0.004 (0.000)***	-5.87	9.827 (0.023)**	2.27	-0.014 (0.535)	-0.62		
IFRSEPS							-0.831 (0.023)**	-2.28
EPS							1.239 (0.000)***	3.92
Firm-years		455		459		461		460
Adjusted R <sup>2</sup>		42.03%		54.44%		47.33%		-
Fixed effects:								
Year		Yes		Yes		Yes		Yes
Industry		-		Yes		Yes		-

**Note:** To assist readability of the AWCA results, we scaled the coefficients by 1000.