

“Corporate governance and management of earnings: empirical evidence from selected Nigerian-listed companies”

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| ARTICLE INFO | Matthew Adeolu Abata and Stephen Oseko Migiro (2016). Corporate governance and management of earnings: empirical evidence from selected Nigerian-listed companies. <i>Investment Management and Financial Innovations</i> , 13(2-1), 189-205. doi: <a href="https://doi.org/10.21511/imfi.13(2-1).2016.07">10.21511/imfi.13(2-1).2016.07</a> |
| DOI          | <a href="http://dx.doi.org/10.21511/imfi.13(2-1).2016.07">http://dx.doi.org/10.21511/imfi.13(2-1).2016.07</a>                                                                                                                                                                                                                                |
| RELEASED ON  | Monday, 04 July 2016                                                                                                                                                                                                                                                                                                                         |
| JOURNAL      | "Investment Management and Financial Innovations"                                                                                                                                                                                                                                                                                            |
| FOUNDER      | LLC “Consulting Publishing Company “Business Perspectives”                                                                                                                                                                                                                                                                                   |



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

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## Corporate governance and management of earnings: empirical evidence from selected Nigerian-listed companies

### Abstract

Due to the threat of recorded business failures arising from weak corporate governance and low financial reporting quality on the Nigerian economy, this study investigates the effects of corporate governance variables on earnings management among selected listed firms from the manufacturing and banking sectors. A sample of 24 listed companies from the 2 sectors' population of 63 was examined to gather empirical data from 2008 to 2013 using multiple regression tools. Employing the panel data analysis approach, board independence, audit committee independence and audit committee size are insignificantly positively correlated with earnings management. Board size is insignificantly negatively correlated with earnings management while ownership structure is insignificantly negatively correlated with earnings management. Audit quality is positively correlated with earnings management, though not statistically significant. Based on these findings, the study concludes that corporate governance structures, as it were, have not helped to address earnings management. The study recommends, among other things considering the first 4 hypotheses that investors should invest in companies with moderate-to-high debt-to-equity ratios as lenders are able to externally monitor companies. It also recommended that regulatory bodies should frequently discharge their supervisory roles by monitoring the companies' activities to ensure compliance.

**Keywords:** corporate governance, earnings management, audit quality, ownership structure, board independence and financial reports.

**JEL Classification:** M41.

### Introduction

Earnings are the most significant accounting item in a financial report. It is a key factor in determining the dividend policy, and a guideline for investment and decision-making, a core measure of a firm's performance, an effective criterion in the stock pricing and eventually an instrument utilized to make predictions (Mohammady, 2012). Better governance is expected to ensure better performance; hence corporate governance has impacted on the performance of firms and earnings management. This relationship has recently attracted considerable attention in the financial management literature. Both in Nigeria and at international level quality financial reporting has received increasing attention from regulatory agencies and academic research (Chen et al., 2010; Code, 2010; Committees, 2002; Hassan & Ahmed, 2012; Hassan & Ibrahim, 2014; Kothari et al., 2005; Sarbanes, 2002; SEC, 2011). This is because the presentation of credible, acceptable and reliable financial reports is the fundamental basis of decision-making in any organization (Aanu, Odianonsen & Foye, 2014). Users of financial statements became worried when high-profile businesses collapsed and financial frauds were reported in renowned firms – including large companies like Enron, WorldCom, Tyco, and Global Crossing (Hwang et al., 2008; Hwang &

Staley, 2005). Responding to this corporate financial fraud, the US Congress enacted the Sarbanes-Oxley (SOX) Act in 2002 and introduced a new era of corporate governance, incorporating requirements for auditor independence, independence of a firm's audit committee, responsibility of a firm's Chief Executive Officer (CEO) and Chief Financial Officer (CFO) for the financial reports and the protection of whistle blowers. This action has made corporate governance, in both developed and developing countries, a crucial mechanism for government regulation of private and public establishments (Hwang, Long & Wang, 2010). In Nigeria, fraudulent financial cases and corporate governance failures were equally reported, such as Cadbury Plc, National Electric Power Authority (NEPA), Nigerian Telecommunications Limited (NITEL), Nigerian Coal Corporation (NCC) and Leventis Plc. The unprecedented cases of non-performing loans in the Nigerian banking industry that consumed banks such as International BankPlc, Oceanic Bank Plc, Bank PHB, and AfribankPlc, all led to significant review of corporate governance regulatory reforms in Nigeria and some other developing economies (Adeyemi, Dabor & Okpala, 2012; Uwuigbe, 2013). In April 2009, for instance, Falcon Securities Limited was investigated and indicted by both the Nigerian Security Exchange (NSE) and the Economic and Financial Crime Commission (EFCC) for obtaining questionable loans from banks – to manipulate their share prices before the public.

Corporate governance refers to the process that seeks to direct and control the affairs of an

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organization, so as to protect the interest of all stakeholders in a balanced manner – with application of the principles of openness, integrity and accountability (Obeten, Ocheni & John, 2014). Gabrielsen, Gramlich & Plenborg (2012) defines corporate governance as all encompassing – it concerns the manner in which corporate entities are managed and regulated, and involves accountability, trust, honesty and stewardship on the one hand and supervision, control, monitoring, oversight and ensuring quality financial reporting on the other hand.

The practice of earnings management involves altering the earnings figures reported through the use of judgmental discretions as allowed by the Generally Accepted Accounting Principles (GAAP). This serves to mislead the users into believing what is actually not true in respect of the earnings's figures to secure a favourable response (like increased demand for the firm's shares), or to influence contractual outcomes which depend on the reported earnings. From this, it is evident that the practice of earnings management can only be carried out by the managers responsible for reporting the firms earnings' figures. Also, looking at the agency theory relations – the part that explains how managers' interests are in conflict with those of the shareholders – it is clear that managers will always try to influence the contractual outcomes in their favor. This is because managers are employees of the shareholders and their performance is usually measured using the earnings they report – as on this bases, they receive their rewards. However, according to (Healy & Wahlen, 1999), if corporate governance mechanisms are effective, the interest of both the owners and controllers of firms' resources should converge. This means that governance variables should be positively related with financial performance and inversely related with the opportunistic tendencies of managers.

Provisions are typically made which in turn shield expenditure in future years when the earnings were not as good. That is, provisions are being used for earnings smoothened and the stakeholders are made to believe – by relying on the financial statements produced – that the firm is performing well. These activities are called earnings management – management actions that diverge from usual business practices, which are undertaken with the primary aim of meeting certain earnings thresholds (Roychowdhury, 2006). Sanusi (2012), among others, while providing anecdotal evidence of earnings' manipulation in the Nigerian banking sector, claimed that one of the eight reasons for the banking crisis in 2008 was “inadequate disclosure and transparency about the financial position of banks.” Various terminologies have been used to describe this, including smoothing, accounts' manipulation,

creative accounting, big bath accounting, and earnings management. Whatever the terminology adopted, the essence is to mislead users about the financial statements and to render financial reports unreliable in support of private gains.

In 2003, the Securities and Exchange Commission (SEC) of Nigeria set up a committee that came up with a code of best practices for public companies tagged “the code” in 2003. In 2005, the Institute of Directors of Nigeria set up a Centre for Corporate Governance to champion the cause of good corporate governance amongst its members. In 2006, the Central Bank of Nigeria (CBN) issued post-consolidation corporate governance guidelines for all banks operating in Nigeria. The CBN later revised “the code” in October 2014 to cover the key indicators such as board size, composition of the board of directors, eligibility for the chairman/CEO, equity ownership, board structure, mandatory disclosure for reporting, and a compliance report by external auditors. The Nigeria code of corporate governance is primarily aimed at ensuring that managers and investors of companies carry out their duties within a framework of accountability and transparency. This should ensure that the interests of all stakeholders are recognized and protected as much as possible. The code of best practices for public companies in Nigeria (“the code”) is voluntary even though it is recommended that all Nigerian public companies must comply with the code or state the reason for non-compliance. The Nigerian Stock Exchange – in partnership with the Convention on Business Integrity (CBI) – on 3 November 2014 launched the foremost Corporate Governance Rating System (CGRS) in Nigeria. This is designed to rate the listed companies based on their corporate governance and anti-corruption culture, thereby improving the overall perception of, and trust in, the Nigerian capital market and business practices. According to Apampa (2014), the rating system is based on a holistic multi-stakeholder approach that uses a diverse information collection and verification approach – which relies not only on self-assessment of companies, but also on the experiences of stakeholders and experts. Companies will be rated on the basis of quality of their corporate integrity, corporate compliance, understanding of fiduciary responsibilities by directors, and corporate reputation. In the rating, corporate integrity attracts the highest weight with corporate reputation taking the least. It is envisioned to be more transparent on rating procedures and rating governance than other corporate governance indices. On its own, the Financial Reporting Council of Nigeria (FRCN) – in addition to the Act of 2011 – recently released an Exposure Draft on the National Code of Corporate Governance. These efforts show

that deliberate attempts are being made by professional and regulatory bodies to enforce compliance. It is widely believed that the quality of financial reporting in a firm is a function of ethical corporate governance compliance in such a firm hence efforts are necessary to enforce corporate governance as a controlling mechanism leading to achieving reliability in corporate financial reporting.

There were several reasons for this study. Nigeria as the largest market in Africa by size plays significant and dominant roles in the economics and politics of the region – in the ECOWAS and the African Union. Furthermore, there is a gap in our knowledge of financial reporting practices from this part of the global economy. Improvements in our understanding of this issue are crucial for a more transparent global market, where cross-listing and cross-border activities are growing. The importance is more clearly highlighted in the case of internationalization of standards and the impact of accounting standard differences on value relevance of the information in the financial statements for different users. The level of research interest in this area directly reflects the effect that the adequacy of financial reporting quality has on decision making by the various users of the financial statements of listed firms in Nigeria. Therefore, the findings of this study are expected to have particularly positive implications in terms of coming up with policies and standards that will control manipulative accounting by regulators responsible for ensuring high quality financial reporting – such as the Financial Reporting Council of Nigeria, the Nigerian Securities and Exchange Commission and Corporate Affairs Commission, and the Central Bank of Nigeria. In addition, the financial analysts, stock market stakeholders and shareholders and management of Nigerian manufacturing firms, stand to benefit tremendously from this research.

Therefore, if corporate governance works well as a controlling mechanism to prevent managerial opportunism, managers in firms with better governance should be able to use earnings management in more positive or informative ways. For firms with better governance, the effect of earnings management should be more positive (or less negative) than the firms with poorer governance.

## 1. Statement of problem

The manufacturing sector is now the major driver of the Nigerian economy. Based on the Nigeria GDP released by Renaissance Capital, the sector is growing faster than the telecommunication, oil and gas, and agricultural sectors. From 2012 to 2013, manufacturing capacity utilization (Index of the health) rose from 46.3% to 52.7%. The manufacturing sector

accounted for one-third of the total growth in the economy in 2013 – rising from 14% to 22%.

In addition, the strength of the economy in any country hinges on the strength and efficiency of the financial system, which, in turn, depends on a sound and solvent banking system (Sharma & Sharma, 2009). To engender global economic growth and development, the banking sector needs to be trustworthy and transparent in their reporting practices (Sala-i-Martin et al., 2013). In this regard, banking-sector can then promote access to financial services needed for the stability of the financial system which is directly related to improved productivity in the economy (Ikhiede, 2008).

Few prior studies have been conducted in Nigeria which address corporate governance practices and their impact on earnings management (Hassan & Ahmed, 2012; Uadiade, 2012; Fodio, Ibikunle & Oba, 2013; Dabor & Ibadin, 2013 and Uwuigbe, Peter & Oyeniyi, 2014), but no prior studies have addressed the relationship between corporate governance and earnings management within these two strategic sectors in the Nigerian context. In developing countries like Nigeria, more attention is needed with respect to acknowledging and implementing corporate governance as there is a high potential for the agency problem to prevail. Many empirical studies show that firms with large shareholders tend to perform better because they have a strong incentive to closely monitor their firms, and thus they are less likely to suffer from the free-rider problem (Jensen & Meckling, 1976; La Porta, Lopez-de- Silanes Shleifer & Vishny, 2000).

Various researchers studied the effects of corporate governance indicators on earnings management in Nigerian. For example, Hassan & Ahmed (2012) examined corporate governance mechanism on firms' performance on 25 non-financial institutions alone. They found board composition negatively related to true performance and positively related to executive compensation; Uadiade (2012) studied earnings management on corporate governance using survey on 100 respondents in Lagos city alone. He found that audit committee members with certain level of experience would reduce the likelihood of earnings management; Fodio, Ibikunle & Oba (2013) investigated corporate governance on reported earnings quality in 25 listed insurance companies alone from 2007 to 2010. He found that BS, BI and ACS are negatively significantly associated with earnings management. Also ACI and independent external audit positively related with discretionary accruals. Dabor & Ibadin, (2013) evaluated the determinants of earnings management and evaluated its implications in 18 listed banks and found ACS, Audit fee, bank asset quality, bank size

were all negatively correlated with abnormal loan loss provision. Also Auditors change, bank performance, board committee and bank leverage were found to be positively correlated. Uwuigbe, Peter & Oyeniyi (2014) on their own studied the effects of corporate governance mechanism on earnings management in 40 listed companies using judgemental sampling technique. They found board size and board independence having significant negative impact on earnings management. Also CEO duality was found having significant positive impact on earnings management. The aforementioned studies were limited in scope, in their sensitivity level and contributions to Nigerian economic growth. Besides, none of the earlier study dealt comprehensively with these 2 driving sectors – banking and manufacturing sectors. Coupled with this is the period under consideration. 2008 to 2013 recorded the highest number of corporate frauds and highest level of cry and yearning for acceptable financial reporting standards in Nigeria. Diverse compromises have been recorded in the past in listed companies leading to abuses and governance failures. Different attempts to potentially alleviate earnings management too became a serious concern after the financial scandals (e.g. Cadbury Plc and Oceanic bank) and the global financial crisis. Focusing on acceptable samples of these two major economic determinants is significant because no prior study has singled out these sensitive sectors of the economy. This study therefore intends to fill the unbridged gap between corporate governance variables and earnings management in manufacturing and banking sectors of the economy.

## 2. Objectives of the study

This study has the following objectives:

1. Examine the relationship between board independence and earnings management;
2. Investigate if board size significantly relates to the level of earnings management;
3. Examine if audit committee independence is related to earnings management in Nigerian-listed firms;
4. Identify the relationship of audit committee size and earnings management;
5. Examine the relationship between ownership structure and earnings management; and
6. Identify the audit quality relationship with earnings management.

## 3. Hypotheses formulation

The study hypotheses are formulated both at general and specific levels. The general hypothesis is  $H_0$ : Corporate governance characteristics do not have significant effect on earnings management. On the other hand, the specific hypotheses are as follows:

1.  $H_0$ : Board independence is not significantly related to the level of earnings management.
2.  $H_0$ : Board size is not significantly related to the level of earnings management.
3.  $H_0$ : Audit committee independence is not significantly related to the level of earnings management.
4.  $H_0$ : Audit committee size is not significantly related to the level of earnings management.
5.  $H_0$ : Audit quality is not significantly related to the level of earnings management.
6.  $H_0$ : Ownership structure is not significantly related to the level of earnings management.

## 4. Literature review

This section reviews literature on corporate governance variables and earnings management.

**4.1. Conceptual clarifications.** *4.1.1. Board independence.* The firm's board has the responsibility of monitoring management to protect shareholders' interests. Therefore, the higher the level of board independence the lower the possibility the company will engage in earnings management. Prior studies have supported the belief that the independence of directors would lessen the likelihood of financial statement fraud Beasley (1996) and Sharma (2004), enhance conservatism in accounting earnings (Beekes et al., 2004; Lara, Osma, & Penalva (2009), and reduce earnings management (Klein 2002; Xie et al., 2003; Davidson, 2005; Duh et al., 2009).

The effectiveness of the monitoring that outsiders provide is a function of the setting that is being examined (Xie, Davidson, & Da Dalt, 2003; Amer & Abdelkarim, 2011). Board independence appears to be the most important internal governance criterion designed to act as an effective monitoring mechanism (Chandler, 1975; Beasley, 1996). This view and continuous call that the board should predominantly comprise outside directors, is grounded from an agency perspective; the strength of the board to act as an operative monitoring device depends on its independence from management (Davidson et al., 2004).

*4.1.2. Board size.* Among major responsibilities of the board of directors is to ensure that other stakeholders are provided with high quality disclosures on the financial and operating results of the entity concerned (UNCTD, 2006). While some researchers found a positive relationship between board size and earnings management, others found a negative relationship. Beasley (1996) and Dechow (1995) found that the more people on the board, the less effective supervision of managers, and the higher the possibility of earnings management. Other studies acknowledge that board size may be related to the level of discretionary accruals. Studies

also demonstrate that there is a positive relationship between board size and earnings management (Chin et al., 2006; Dalton et al., 2003; Gulzar & Wang, 2011; Rahman & Ali, 2006). On the contrary, Xie et al. (2003) found a negative relationship between board size and earnings management. However, they state that larger boards with diverse knowledge are more effective for constraining earnings management than smaller boards. The appropriateness of the size of boards however depends on having substantial percentage of members among them that are experienced to perform the monitoring functions effectively.

*4.1.3. Audit committee independence.* The audit committee role is significant in monitoring management – to protect shareholders' interests. The code of best governance practice in Nigeria demands that the committee should be largely independent, highly competent and possess a high level of integrity. Section 9 (1 & 2) of the SEC Code of Corporate Governance states that "The Board of a listed company should determine to what extent to which its duties and responsibilities should be undertaken by committees. It should determine the number and composition of committees and ensures that each committee comprises of the relevant skills and competences and that its members commit sufficient time to the committee's work..."

Earlier literature examined the association between the audit committee and earnings management using various abstractions of audit committee effectiveness – such as size of the board (Yermack, 1996; Xie et al., 2001), composition, and independence (Klein, 2002), audit committee meetings (Beasley et al., 2000), financial expertise of committee members (Kalbers & Fogarty, 1993), and financial motivation of independent directors (Bedard, Chtourou & Courteau, 2004). Hassan (2011) observed that more attention has been given to financial professionals as a construct of board competence. This, he observed, could be deceptive, as accounting expertise is much more useful to board members in the performance of their duties as a monitoring mechanism.

Empirical results on the association between the audit committee and opportunistic accounting are unresolved. Xie et al. (2001) using a sample of 282 firm year observations from the S & P 500 index for 1992, 1994 and 1996, examined the impact of the board and audit committee on earnings management and found that the operative committee of knowledgeable members – members with some financial expertise and/or corporate background – is associated with a reduced level of discretionary accruals.

In Nigeria, Olayinka (2012) and Dabor & Adeyemi (2009) also observed that an independent audit

committee with members having certain level of financial competencies would reduce the likelihood of earnings management. Adeyemi, Okpala and Dabor (2012) studied the factors affecting audit quality in Nigeria using 430 respondents, with 40 annual reports of listed companies. They found multiple directorships as being the most significant in terms of audit quality. Babalola (2013) examined the effectiveness of audit committees using 10 manufacturing firms covering the years 2000 to 2009 and found that board size and management ownership significantly affect the effectiveness of audit committees in Nigeria. He equally found that board composition, leverage, profitability and shareholding positively but insignificantly impact on the audit committees' effectiveness. Madawaki and Amran (2013) investigated whether audit committees are associated with improved financial reporting quality for a sample of listed companies prior to and after the corporate governance-mandated new regulations for audit committees in 2003. He found that the formation of audit committees, an independent chair and committee members' expertise were positively associated with improved financial reporting.

*4.1.4. Audit committee size.* There is a lack of consensus among scholars about the connection between audit committee size and quality of financial reporting. Xie et al. (2003), Abbott et al. (2004), Bedard, Chtourou, & Courteau (2004) and Baxter (2009) failed to find a strong connection between size of audit committee and aggressive earnings management, and a restatement occurrence. Abbott et al. (2004) examined the period 1991 to 1999, based on forty-one (41) companies that released fraudulent reports and eighty-eight (88) which restated annual statements. They found that size of an audit committee has no strong effect on the quality of financial reporting. On the other hand, Dhaliwal et al. (2006) showed that size of a committee is among the most essential characteristics that contribute to committee governance strength. Li et al. (2008) also showed that the size of a committee can inspire relevant and appropriate disclosures. (Naimi, Nor, Rohami & Wan-Hussin, 2010) documented that it is more likely to uncover and resolve potential challenges in the financial reporting process with a large audit committee, especially if the size is used as a basis for allocating resources to the committee.

*4.1.5. Ownership structure.* Ownership concentration is a measure of the existence of large shareholders in a firm (Thomsen & Pedersen, 2000). Large shareholders have greater incentives to monitor management, because the costs associated with monitoring management are less than the expected benefits to their large equity holdings in the firm. Higher concentration is expected to decrease

management's capacity to alter accounting earnings and increase the reliability earnings. But where shareholders have a low stake in a firm, they have little or no incentive to monitor managers, because the monitoring cost will exceed the benefits of monitoring managers (Ramsay & Blair, 1993; Hart 1995). On the other hand, concentrated equity ownership is believed to be bad for the governance of the firm since it gives the largest shareholders too much discretionary power to use firm's resources in a way that serves their interests at the expense of other shareholders. However, some studies found no significant association between concentrated ownership and earnings management (Haniffa, Abdul Rahman & Haneem-Mohammed, 2006; Davidson et al., 2004; Koh, 2003). Once managers have no incentive to manage earnings opportunistically, it is believed they will act according to the interest of the shareholders, and thus ownership concentration should not have an impact on shareholders' perception of accounting earnings.

*4.1.6. Audit quality.* The role of auditing in ensuring the quality of financial reporting of earnings and restraining the client company from engaging in earnings management has become an important issue given the many reported corporate accounting scandals. Audit quality combines the ability of an auditor to detect a breach (auditor competence) and a willingness to report such a breach (auditor independence). The Financial Reporting Council (2006) considers five factors that influence audit quality: audit firm culture, skills and personal qualities of audit partners and staff, effectiveness of the audit process, and the reliability and usefulness of audit reporting. (Gerayli, Yanesari & Ma'atoofi, 2011) stated that "audit quality differences result in variation in credibility offered by the auditors, and in the earnings quality of their audit clients". Prior studies have focused on the association of audit quality factors with earnings management – such as the establishment of an audit committee, audit committee members' backgrounds and financial expertise and engagement of the Big 4 audited firms. However, although previous research tested the significance of the audit committee on earnings management, this study focused on Big 4 auditors (KPMG, Price Water House Coopers, Akintola Williams & Deloitte, and Ernest and Young) and their role in restraining earnings management. Such auditors are assumed to be better at constraining client earnings management compared to non-Big4 auditors (Becker et al., 1998; Francis et al., 1999; Krishnan, 2003). According to Becker et al. (1998), the mean and median of the absolute value of discretionary accruals are greater for firms with non-Big4 auditors, which indicates that lower audit

quality is associated with higher earnings management. In addition Elder, Zhou & Chenet al., 2009 claimed that the big 4 auditors are associated with less earnings management in their engaged firms.

Some authors used earnings quality, which is in turn measured using discretionary accruals as a proxy for audit quality (Balsam et al., 2003). Carey & Simnett (2006) used the type of audit opinion as a proxy for audit quality in examining the relationship between the length of partner tenure and the propensity for audit partners to issue a modified audit opinion. Adeniyi and Mieseigha (2013) and Enofe & Jensen (2013) measured audit quality by the likelihood that a sampled company employs the services of any of the big 4 audit firms.

*4.1.7. Earnings management.* Davidson et al. (1987) in Schipper (1989) defined earnings management as "the process of taking deliberate steps within the constraints of Generally Accepted Accounting Principles (GAAP) to bring about a desired level of reported income". Healy and Wahlen (1999) state that "earnings management occurs when managers use judgment in financial reporting in structuring transactions to alter financial reports, to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting". According to Roodposhti and Chashmi (2011) it occurs in three ways: (1) via the structuring of certain revenue and/or expense transactions; (2) via changes in accounting procedures; and/or (3) via accruals' management. While the first and the second can only be measured by researchers who have insiders information, the accruals approach can be measured externally that is from financial reports of the concerned firms.

Earnings management occurs for various reasons. For instance, companies may manage their earnings with the aim of influencing stock market perceptions to increase their compensation, to reduce the likelihood of violation of lending agreements, and to avoid regulatory intervention (Healy & Wahlen, 1999; Teoh, Welch & Wong, 1998). Earnings management can have detrimental effects on the future prospects of companies as prior studies show evidence of a negative effect on long-run performance of companies (Kao, Wu & Yang, 2009; Stehle, Ehrhardt & Przyborowsky, 2000; Teoh et al., 1998). In addition, investors may be misled into wrong decisions through acquiring the wrong information about the health of companies (Bhattacharya, Daouk & Welker, 2009). However, discretionary accruals are used as a proxy for earnings management in this study.

## 5. Theoretical foundations

This study uses the agency theory as a theoretical background to form an empirical framework for assessing corporate governance characteristics and earnings management of selected listed companies in Nigeria. Berle and Means (1932) in Morck et al. (1988) argued that there is a good separation between the ownership and power of operational management if corporate shares are spread widely over a great number of small shareholders and when the managers act as the agents for the shareholders. Jensen and Meckling (1976) propose the agency theory to illustrate the conflict between firm managers and shareholders. In order to reduce this problem, monitoring is required and the cost of monitoring is part of agency cost. Fama (1976) in Ball (1978), and Jensen and Meckling (1976), claimed that managers may pursue personal interest at the expense of the interest of shareholders if they do not own a higher percentage of shares while making managerial decisions. This problem would become a central agency problem, in which new conflicts arise between controlling and non-controlling shareholders when managers also own significant numbers of shares through stock options, pyramidal ownership structure, or crossing holdings (La Porta et al. (1999); Jian and Wong, 2003).

Kostyuk et al. (2007) observe that the agency relationship arises in any situation involving cooperative effort by two or more people. Thus, agency theory assumes both the principal and the agent are motivated by self-interest. If both parties are motivated by self-interest, agents are likely to pursue self-interested objectives that deviate and even conflict with the goals of the principal even when agents are supposed to act in the sole interests of their principals.

Corporate governance is likely to reduce the incidence of earnings management. Corporate governance is also likely to improve investors' perception of the reliability of a firm's performance, as measured by the earnings. That is, corporate governance will be value relevant when earnings management exists. However, several academic studies have argued that earnings management may be beneficial because it potentially enhances the information value of earnings. Managers may exercise discretion over earnings to communicate private information to stockholders and the public (Arya, Glover & Sunder, 2003; Tucker & Zarowin, 2006; Guay, Kothari & Watts, 1996; Healy & Wahlen, 1999; Holthausen, 1990; Subramanyam, 1996; Watts & Zimmerman, 1986). In such cases, earnings management may not be harmful to the stockholders and the public. In fact, the empirical evidence in Subramanyam (1996) supports the

contention that managers exercise their discretion to improve the ability of earnings to reflect fundamental value. Other studies, nevertheless, argue in favor of the opportunistic use of earnings management (e.g. Healy & Palepu, 1993). Dutta and Gigler (2002) developed a model to justify the benefit of earnings management. They show that the shareholders' wealth can be reduced when the possibility of earnings management is restricted by an accounting standard and auditing process. According to Magrath and Weld (2002), managers can use earnings management to lessen the volatility of earnings, and that can help reduce the level of perceived risks by investors and increase the worth of the firm. Therefore, managers who have been involved in earnings management also follow the value maximization principle. Ning (2006) has also argued that earnings management is not fraud because it is done within legitimate constraint. Moreover, it may create misrepresentation of earnings reporting – but it does not misrepresent the firm's economic worth in terms of total value of asset, liabilities, and equity. Jiraporn, Miller, Yoon, and Kim (2008) provide the empirical evidence using the data for US firms. Their result shows that earnings management is beneficial because there is the positive relationship between it and firm value.

While earnings management is usually driven by the desire to augment firm's stock price in developed economy, It is not the same in developing economies. In developed economy, the stock price is always the key basis for the flexible components of managerial compensation – which may include stock options, bonuses, and other long-term incentives (Baker et al., 2003 & Cohen et al., 2007). These incentives may be insignificant in developing economies mainly because, in developing markets the listed companies have a highly-concentrated ownership structure and top managers are either controlling shareholders or directly represent the interest of controlling shareholders (La Porta, Lopez-de-Silanes, Shleifer & Vishny, 2000). Thus, earnings management can be viewed as either opportunistic or beneficial.

## 6. Research methods

Quantitative methods were employed to examine the relationships between the independent variables (ownership structure, board composition, independence of the audit committee, firm performance, firm size, and leverage) and the dependent variable (earnings management). The data were drawn from annual reports of 24 companies (12 banks and 12 manufacturing companies) listed on the Nigerian Securities Exchange (NSE). Although the NSE has 221 companies (63 represents the study population) with

24 banks and 39 manufacturing firms, only 24 companies altogether have the complete data needed to compute accounting accruals over the six-year period. The data were for the period from year 2008 to the end of 2013. The design was chosen because the population is small and the use of panel data increases the number of observations – thus allowing meaningful statistical analysis. In order to calculate values of variables to test the hypotheses, directors' report, profit and loss accounts were all read. Financial and accounting data were sourced from individual company websites, and where not available hard copies of reports were obtained from the NSE library.

**6.1. Dependent variable.** This study used the accounting accruals' approach to measure earnings management (the dependent variables). The accounting accruals approach requires that total accruals be decomposed into discretionary and non-discretionary accruals. While non-discretionary accruals are not susceptible to manipulations by managers, discretionary accruals on the other hand, offer them opportunities to creatively fiddle with earnings when preparing financial statements using the windows of accounting policy choices and accounting estimates (Healy, 2001). Discretionary accruals were used extensively to demonstrate that managers transfer their accounting earnings from one period to another.

Consistent with previous literature on earnings management (Dechow, Ge & Schrand, 2010; Diamantopoulos & Asteriou, 2010; Jianga, Leeb & Anandarajan, 2008; Lai, 2011) the study used the modified Jones model (1991) to detect the extent of earnings management. Chen & Zhang (2012) and Phillips, Pincus and Rego (2002), amongst others, concluded that the modified Jones model was the best for estimating earnings management. Firms were considered to have engaged in income increasing (decreasing) discretionary accruals if they had positive (negative) estimated discretionary accruals. Total accruals is defined as the difference between Net Income, which is the earnings before taxation and extraordinary item and cash flow from operating activities (OCF):

$$TACC_{it} = NI_{it} - OCF_{it}. \quad (1)$$

$$\frac{TACC_{it}}{A_{it-1}} = \alpha_t \left( \frac{1}{A_{it-1}} \right) + \alpha_{1i} (\Delta REV - \Delta REC) / A_{it-1} + \alpha_{2i} [PPE_{it} / A_{it-1}] + \mu_{it}. \quad (2)$$

$$\mu_{it} = \left[ \frac{TACC_{it}}{A_{it-1}} \right] - \left[ \left( \alpha_t \left[ \frac{1}{A_{it-1}} \right] + \alpha_{1i} \left[ \frac{(\Delta REV - \Delta REC)}{A_{it-1}} + \alpha_{2i} \left[ \frac{PPE_{it}}{A_{it-1}} \right] \right] \right] \right] \quad (3)$$

where  $TACC_{it}$  is the total accruals ( $NI - OCF$ ),  $\Delta REV$  is change in revenue,  $\Delta REC$  is change in receivables,  $PPE_{it}$  is property, plant and equipment, and  $\mu_{it}$  is the residual.  $A_{it-1}$  – total assets in prior years;  $\alpha_t$ ,  $\alpha_{1i}$ ,  $\alpha_{2i}$  are estimated coefficients.

Following Teoh, Welch, and Wong (1998) and Jones (1991) – to control for heteroscedasticity, all naira-denominated independent variables were scaled by prior years' total assets. Change in revenue is included to control for economic circumstances of each firm in the sample, while gross plant, property and equipment were included to control for the total proportion of accruals relating to non-discretionary expenses. It is worth noting that discretionary accruals are obtained by taking the error term ( $\mu_{it}$ ) in equation (2) and (3). Consistent with You et al. (2003) the larger the value of the discretionary accruals, the higher the presence of earnings manipulation and vice-versa.

**6.2. Independent variables.** For the purpose of this study, corporate governance (the independent variables) is proxied by board size, board independence, audit committee independence, audit committee size, and audit quality.

Operationally, board size (BS) is measured as the total number of directors on the board; board independence (BI) is measured as the proportion of non-executive directors to total directors; audit committee independence (ACI) is measured as the proportion of non-executive audit committee members to the total number of audit committee members; audit committee size (ACS) is measured as the total number of audit committee members; audit quality (AQ) is measured by the engagement of the big 4 audit firms. A firm is assigned "1" if it engaged any of the big 4 and assigned 0 if it did not engage them; ownership structure (OS) is measured by the proportion of shares owed by the five largest shareholders to total shareholdings.

It should be noted that the binary regression methodology used for audit quality is based on fundamental justification: (1) assumed occurrence is binary in nature, and restricted to '1' (firms using the big 4-KPMG, Pricewaterhouse Coopers, Ernst & Young and Akintola Williams & Deloitte LLP) and '0' (firms not using them), (2) binary regression is based on the use of the maximum likelihood estimator (MLE) and does not assume linearity, normality, homoscedasticity, and hence less stringent assumptions (Greene, 2003; Omoye & Eriki, 2014).

**6.3. Control variables.** Prior studies revealed that many variables might impact the process of governance and the quality of earnings. Different researchers examined these control variables: leverage, size, and firm's growth. Control variables are used to control the causal relationship in a model, in order to get a more complete empirical model (Sanjaya et al., 2012). According to Smith and Watts (1992) executive discretion is stronger for

high growth companies which invariably will make such companies choose a mechanism that will guard against the probable agency crisis, by adopting suitable and adequate corporate policies (Gaver & Gaver, 1993).

Executives of highly leveraged companies have the inducement to indulge in income-boosting earnings management, to evade debt covenants (De Fond & Jambalo, 1994). In the same vein, Baxter (2007) observed that companies that are highly leveraged stand the risk of debt covenant constraints and therefore are more likely to manipulate their earnings. Firm growth, leverage and size are used in most studies on earnings management and corporate governance to control factors – hence they are included in this study (Hassan & Ahmed, 2012; Waweru et al., 2013). Leaning on these positions, this study employed leverage and size as control variables. Operationally, firm size is measured by the natural logarithm of total asset while leverage is measured as ratio of non-current liabilities to shareholders' equity.

**6.4. Model specifications.** The study regression models are as specified below:

$$DA_{it} = \alpha_0 + \alpha_1 BI_{it} + \alpha_2 LEV_{2it} + \alpha_3 S_{it} + \mu_{it}. \quad (4)$$

$$DA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 LEV_{2it} + \beta_3 S_{it} + \mu_{it}. \quad (5)$$

$$DA_{it} = \lambda_0 + \lambda_1 ACI_{it} + \lambda_2 LEV_{2it} + \lambda_3 S_{it} + \mu_{it}. \quad (6)$$

$$DA_{it} = \gamma_0 + \gamma_1 ACS_{it} + \gamma_2 LEV_{2it} + \gamma_3 S_{it} + \mu_{it}. \quad (7)$$

$$DA_{it} = \varphi_0 + \varphi_1 OS_{it} + \varphi_2 LEV_{2it} + \varphi_3 S_{it} + \mu_{it}. \quad (8)$$

$$DA_{it} = \Phi_0 + \Phi_1 AQ_{it} + \Phi_2 LEV_{2it} + \Phi_3 S_{it} + \mu_{it}. \quad (9)$$

$$DA_{it} = \rho_0 + \rho_1 BI_{it} + \rho_2 BS_{it} + \rho_3 ACI_{it} + \rho_4 ACS_{it} + \rho_5 OS_{it} + \rho_6 AQ_{it} + \rho_7 LEV_{2it} + \rho_8 S_{it} + \mu_{it}. \quad (10)$$

Where  $\alpha_0, \beta_0, \lambda_0, \gamma_0, \varphi_0, \Phi_0$  and  $\rho_0$  are intercepts, while  $\alpha_1, \alpha_2, \alpha_3, \beta_1, \beta_2, \beta_3, \lambda_1, \lambda_2, \lambda_3, \gamma_1, \gamma_2, \gamma_3, \varphi_1, \varphi_2, \varphi_3, \Phi_1, \Phi_2, \Phi_3, \rho_1, \rho_2, \rho_3, \rho_4, \rho_5, \rho_6, \rho_7$  and  $\rho_8$  are estimated coefficients of the independent variables.

## 7. Results and findings

**7.1. Hypothesis one:** *Board independence is not significantly related to the level of earnings management.*

The results in table I show clearly that the fixed-effect approach to panel-data analysis is appropriate, as compared to the random-effect approach. This decision is predicated on the fact that the asymptotic significance of 0.00000 is less than the level of significance of 0.05. On the strength of this decision, it is evident from the same table that board independence is insignificantly positively correlated with earnings management. Apart from the fact the results do not conform to an *a priori* negative relationship, this relationship is also not statistically

significant at the 5% level of significance. This demonstrates that board independence, as it were, may not help to reduce the incidences of earnings management. This is contrary to the earlier findings of Uwuigbe, Peter & Oyeniyi (2014) where it was found to reduce earnings management.

The control variables of leverage and size are negatively correlated with earnings management. While the former is not statistically significant, the latter is very significant at the 5% level. This suggests that the more geared a company is, the more external pressure the lenders can mount on the company, and consequently the lower will be the incidences of earnings management. The *r*-square statistic shows that board independence, together with the control variables of leverage and size, explained about 62% of the variation noted in earnings management, while the probability value of the *F*-statistic reveals that, overall, the model is fit.

**7.2. Hypothesis two:** *Board size is not significantly related to the level of earnings management.*

As shown in Table 2 below, we reject the random-effect and uphold the fixed-effect approach. This decision is predicated on the fact that the asymptotic significance of 0.00000 is less than the level of significance of 0.05. The result also shows that board size is insignificantly positively correlated with earnings management. Although these results do not conform to an *a priori* negative relationship, this demonstrates that board size may not help reduce the incidences of earnings management in line with board independence. This tallies with Rahman and Ali (2006), who claimed that board size is positively related to earnings management but contrary to Dabor & Ibadin (2013) that found board size negatively with earnings management.

Leverage and size effects are negatively correlated with earnings management. While the former is not statistically significant, the latter is very significant. The *r*-square statistic shows that 62% of explained variation noted in earnings management is due to the board independence and the control variables. The *F*-statistic reveals that the model has a good fit.

**7.3. Hypothesis three:** *Audit committee independence is not significantly related to the level of earnings management.*

As shown in Table 3, the fixed-effect approach is upheld while the random-effect is rejected. This decision is based on the fact that the asymptotic significance of 0.00000 is less than the level of significance of 0.05. Consequently, it can be inferred that audit committee independence is insignificantly positively correlated with earnings management. However, these results do not conform to an *a priori* negative relationship and it is not

statistically significant. The practical inference is that audit committee independence does not significantly help lessen earnings management.

Leverage and size are both negatively correlated with earnings management. Though the former is not statistically significant, the latter is very significant showing that the more geared a company is, the more external pressure the lenders can mount on the company, and consequently the lower will be the incidences of earnings management. The  $r$ -square statistic shows that 62% of variation that can be explained in earnings management is due audit committee independence and control variables. The  $F$ -statistic reveals that the overall the model has a good fit.

**7.4. Hypothesis four:** *Audit committee size is not significantly related to the level of earnings management.*

Findings in Table 4 reveals that the fixed-effect approach to panel-data analysis is appropriate compared to the random-effect approach. This is due to the fact that the asymptotic significance of 0.00000 is less than the level of significance of 0.05. On the strength of this decision, audit committee size is insignificantly positively correlated with earnings management. These results do not conform to an *a priori* negative relationship though not statistically significant. This shows that audit committee size may not help reduce the incidences of earnings management. This is contrary to the findings of Dabor & Ibadin (2013), Dhaliwal et al. (2010) and Li et al. (2008).

This result suggests that the more geared a company is, the more external pressure the lenders can mount on the company, and consequently the lower will be the incidences of earnings management. The  $r$ -square statistic shows that audit committee size – together with the control variables of leverage and size explained about 62% of the variation noted in earnings management. On overall with the probability value as the  $F$ -statistic reveals, the model has a good fit.

**7.5. Hypothesis five:** *Ownership structure is not significantly related to the level of earnings management.*

The results in Table 5 demonstrate clearly that the fixed-effect approach to panel-data analysis is appropriate, compared to the random-effect approach. This decision is predicated on the fact that the asymptotic significance of 0.00000 is less than the level of significance of 0.05. On this decision, it is evident that ownership concentration is significantly positively correlated with earnings management at the 10% level of significance showing that the more disperse the ownership structure of a company, the

greater is the tendency by management to indulge in earnings management. This finding therefore supports the argument infavour of concentrated ownership structure, if earnings management is to be effectively addressed.

Result suggests that the more geared a company is, the more external pressure the lenders can mount on the company, and consequently the lower will be the incidences of earnings management. The  $r$ -square statistic shows that ownership concentration together with the control variables of leverage and size, explained about 63% of the variation noted in earnings management, while the probability value of the  $F$ -statistic reveals that on overall, the model has a good fit.

**7.6. Hypothesis six.** *Audit quality is not significantly related to the level of earnings management.*

Results in Table 6 reveal that audit quality is positively correlated with earnings management though not statistically significant. This shows that the higher the quality of a company's audit, the greater is the tendency by management to indulge in earnings management. This finding therefore raises a fundamental question on the quality of the audit in the selected companies, as, expectedly, higher audit quality should help mitigate the earnings management proclivities of management.

The impact of the control variables of leverage and size does not bear the same pattern as other hypotheses. While others are negatively correlated, here it is positively correlated with earnings management. While the former is not statistically significant, the latter is very significant. This suggests that the more geared a company is, the more external pressure the lenders can mount on the company, and, consequently, the higher will be the incidences of earnings management. This runs contrary to the expected relationship. The  $r$ -square statistic shows that audit quality, together with the control variables of leverage and size, explained about 17% of the variation noted in earnings management, while the probability value of the  $F$ -statistic reveals that on overall shows that the model is fit.

**7.7. Combined model.** The results in Table 7 revealed that that board independence is insignificantly positively correlated with earnings management. Apart from that the fact results do not conform to an *a priori* negative relationship. This demonstrates that board independence may not help reduce the incidences of earnings management. Also, board size is noted to be insignificantly negatively correlated with earnings management. This means that board size can help reduce the incidences of earnings management.

Audit committee independence is insignificantly positively correlated with earnings management.

However, these results do not conform to an a priori negative relationship and it is also not statistically significant. The practical inference is that audit committee independence may not significantly impact on earnings management. Similar inferences can be made of audit committee size.

Furthermore, ownership concentration is insignificantly negatively correlated with earnings management. This shows that the more dispersed the ownership structure of a company, the lesser is the tendency by management to indulge in earnings management. This finding, therefore, supports the argument in favor of dispersed ownership structure if earnings management is to be effectively addressed. Audit quality, contrarily, is positively correlated with earnings management, but this relationship is also not statistically significant. This shows that the higher the quality of a company's audit, the greater is the tendency by management to indulge in earnings management. This finding therefore raises a fundamental question on the quality of the audit in the selected companies, as, expectedly, higher audit quality should help mitigate the earnings management proclivities of management. Examples were Societe Generale and Oceanic banks that folded up even though they were audited by firms among the *Big4* audit firms in Nigeria.

The impacts of the control variables of leverage and firm size do bear the same pattern as other hypotheses. When combined with all the corporate governance variables in this study, they are both positively correlated with earnings management. While leverage is not statistically significant, the firm size is very significant. This suggests that the more geared a company is, the more likely external pressure the lenders can mount on the company, and, consequently, the higher will be the incidences of earnings management. Also, the bigger the size of the company, the greater the likelihood that management will manipulate earnings. This runs contrary to the expected relationship. The study findings inspire further research on the impacts of corporate governance characteristics on earnings management in unlisted firms in Nigeria – as this will reveal activities and practices prevailing in that area.

### Conclusion and recommendations

This study examined the effects of corporate governance indicators on earnings management in

selected listed companies on the Nigerian stock exchange. Some findings need further investigation; for instance, audit quality ought to minimise earnings management but it is not the case here, that is firms audited by the big 4 audit firms equally were prone to earnings management. The question that readily comes to mind is, could it be said that the impact of the big four auditing firms on the analysed companies has not been seen as anticipated? If this is true, where lays these auditing firms uniqueness? This study also has some limitations. It dealt with only selected listed firms from two core areas of the economy – manufacturing and banking. Non-consideration of the reports of other listed companies and even unlisted companies present a limitation. Restricting the research to these selected firms excludes a significant portion of the productive sectors of the economy. Scoring the indicators of corporate governance as presented in this study is also contestable.

It is therefore recommended that investors should focus more on companies with lower debt-to-equity ratios in their financial reports. Regulatory bodies such as the Security and Exchange Commission (SEC), Nigeria Stock Exchange (NSE), the Central Bank of Nigeria (CBN) and the Financial Reporting Standards Council should evolve modalities for enforcement of corporate governance codes in Nigerian corporate establishments. These regulatory bodies should continually exercise supervisory roles over the firms consistently to ensure compliance. Equally, the Nigerian government should pass laws that will mandate compliance with corporate governance practices – and violators should be made to pay material fines for non-compliance.

Reform efforts are urgently needed both from the government and regulatory bodies that will make corporate governance compliance mandatory and not optional. It is even necessary that corporate governance should be extended to the small and medium scale enterprises as this will enhance their performance and contribute to the national economic growth. Corporate governance is as important for small companies as for larger ones. These findings encourage further examination of the nature and impact of corporate governance on the management of earnings in the unquoted companies in Nigeria.

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## Appendix

Table 1.

| Variables          | Fixed effects |              |         | Random effects |              |          | Hausman test |         |
|--------------------|---------------|--------------|---------|----------------|--------------|----------|--------------|---------|
|                    | Coefficients  | T-statistics | p-value | Coefficients   | t-statistics | p-value  | Statistic    | P-value |
| Constant           | 9.279545      | 3.692222     | 0.0003* | -1.549416      | -1.158947    | 0.2485   | 27.02346     | .00000* |
| Board independence | 0.291935      | 0.500611     | 0.6176  | -0.000374      | -0.000808    | 0.9994   |              |         |
| Leverage           | -0.00489      | -0.413166    | 0.6802  | -0.004263      | -0.370864    | 0.7113   |              |         |
| Size               | -0.833502     | -3.747693    | 0.0003* | 0.136749       | 1.196631     | 0.2335   |              |         |
| Others             |               |              |         |                |              |          |              |         |
| F-statistics       | 7.361053      |              | .00000* | 0.440601       |              | 0.724323 |              |         |
| R-square           | 0.620607      |              |         | 0.009353       |              |          |              |         |

Source: Author's computation.

Table 2.

| Variables | Fixed effects |              |         | Random effects |              |         | Hausman test |         |
|-----------|---------------|--------------|---------|----------------|--------------|---------|--------------|---------|
|           | Coefficients  | T-statistics | p-value | Coefficients   | t-statistics | p-value | Statistic    | P-value |
| Constant  | 9.490498      | 3.782022     | 0.0002* | -1.860845      | -1.407449    | 0.1615  | 29.94014     | 0.0000* |

Table 2 (cont.).

|                    | Fixed effects |              |         | Random effects |              |         | Hausman test |         |
|--------------------|---------------|--------------|---------|----------------|--------------|---------|--------------|---------|
| Variables          | Coefficients  | T-statistics | p-value | Coefficients   | t-statistics | p-value | Statistic    | P-value |
| Board independence | 0.025586      | -0.953667    | 0.3422  | -0.006211      | -0.26904     | 0.7883  |              |         |
| Leverage           | -0.00125      | -0.103189    | 0.9180  | -0.003573      | 0.309034     | 0.7578  |              |         |
| Size               | -0.807712     | -3.653645    | 0.0004* | 0.170963       | 1.355673     | 0.1774  |              |         |
| Others             |               |              |         |                |              |         |              |         |
| F-statistics       | 7.427704      |              | 0.0000* | 0.59437        |              | 0.6197  |              |         |
| R-square           | 0.622727      |              |         | 0.012576       |              |         |              |         |

Source: Author's computation.

Note: \* Significant at 5% level.

Table 3.

|                              | Fixed effects |              |         | Random effects |              |          | Hausman test |         |
|------------------------------|---------------|--------------|---------|----------------|--------------|----------|--------------|---------|
| Variables                    | Coefficients  | T-statistics | p-value | Coefficients   | t-statistics | p-value  | Statistic    | P-value |
| Constant                     | 9.281491      | 3.577831     | 0.0005  | -2.086676      | -1.559109    | 0.1212   | 26.99909     | .0000   |
| Audit committee independence | 0.038954      | 0.080724     | 0.9358  | 0.317613       | 1.014047     | 0.3123   |              |         |
| Leverage                     | -0.004178     | -0.35523     | 0.7231  | -0.004634      | -0.405045    | 0.6861   |              |         |
| Size                         | -0.819972     | -3.6823      | 0.0004  | 0.162446       | 1.434968     | 0.1535   |              |         |
| Others                       |               |              |         |                |              |          |              |         |
| F-statistics                 | 7.33636       |              | 0.0000  | 0.822243       |              | 0.483672 |              |         |
| R-square                     | 0.619816      |              |         | 0.017314       |              |          |              |         |

Source: Author's computation.

Table 4.

|                      | Fixed effects |              |         | Random effects |              |          | Hausman test |         |
|----------------------|---------------|--------------|---------|----------------|--------------|----------|--------------|---------|
| Variables            | Coefficients  | T-statistics | p-value | Coefficients   | t-statistics | p-value  | Statistic    | P-value |
| Constant             | 9.317517      | 3.699944     | 0.0003  | -1.680407      | -1.309571    | 0.1925   | 26.8101      | 0.0000  |
| Audit committee size | 0.006035      | 0.102108     | 0.9188  | 0.044833       | 0.98354      | 0.327    |              |         |
| Leverage             | -0.004176     | -0.355028    | 0.7232  | -0.004444      | -0.388553    | 0.6982   |              |         |
| Size                 | -0.823181     | -3.711673    | 0.0003  | 0.128312       | 1.122758     | 0.2635   |              |         |
| Others               |               |              |         |                |              |          |              |         |
| F-statistics         | 7.336756      |              | 0.0000  | 0.788151       |              | 0.502435 |              |         |
| R-square             | 0.619828      |              |         | 0.016608       |              |          |              |         |

Source: Author's computation E-Views.

Note: \* Significant at 5% level.

Table 5.

|                     | Fixed effects |              |          | Random effects |              |          | Hausman test |         |
|---------------------|---------------|--------------|----------|----------------|--------------|----------|--------------|---------|
| Variables           | Coefficients  | T-statistics | p-value  | Coefficients   | t-statistics | p-value  | Statistic    | P-value |
| Constant            | 10.68959      | 4.088167     | 0.0001   | -1.49728       | -1.157398    | 0.2491   | 29.95013     | 0.0000  |
| Ownership structure | 0.570649      | 1.663809     | 0.0988   | -0.106177      | -0.407933    | 0.6839   |              |         |
| Leverage            | -0.003395     | -0.291795    | 0.771    | -0.00426       | -0.3764      | 0.7072   |              |         |
| Size                | -0.955163     | -4.098495    | 0.0001   | 0.134697       | 1.183886     | 0.2385   |              |         |
| Others              |               |              |          |                |              |          |              |         |
| F-statistics        | 7.615738      |              | 0.000000 | 0.462201       |              | 0.709127 |              |         |
| R-square            | 0.628582      |              |          | 0.009807       |              |          |              |         |

Source: Author's computation.

Table 6.

| Variables     | Pooled effect |              |         |
|---------------|---------------|--------------|---------|
|               | Coefficients  | T-statistics | P-value |
| Constant      | -4.58181      | -5.23988     | 0.0000  |
| Audit quality | 0.250366      | 0.918107     | 0.3601  |
| Leverage      | 0.00435       | 0.309325     | 0.7575  |

Table 6 (cont.).

|              | Pooled effect |              |          |
|--------------|---------------|--------------|----------|
| Variables    | Coefficients  | T-statistics | P-value  |
| Size         | 0.382202      | 4.823916     | 0.0000   |
| Others       |               |              |          |
| F-statistics | 9.364348      |              | 0.000011 |
| R-square     | 0.167128      |              |          |

Source: Author's computation.

Table 7.

|                              | Pooled effect |              |          |
|------------------------------|---------------|--------------|----------|
| Variables                    | Coefficients  | T-statistics | P-value  |
| Constant                     | -5.57790      | -4.989695    | 0.0000   |
| Board independence           | 0.145315      | 0.356671     | 0.7219   |
| Board size                   | -0.034390     | -1.396121    | 0.1650   |
| Audit committee independence | 0.249678      | 0.585368     | 0.5593   |
| Audit committee size         | 0.054064      | 0.773379     | 0.4407   |
| Ownership structure          | -0.29749      | -1.279539    | 0.2029   |
| Audit quality                | 0.390026      | 1.404874     | 0.1624   |
| Leverage                     | 0.003498      | 0.24852      | 0.8041   |
| Size                         | 0.454029      | 4.060662     | 0.0001   |
| Others                       |               |              |          |
| F-statistics                 | 4.581157      |              | 0.000058 |
| R-square                     | 0.213512      |              |          |

Source: Author's computation.