Residual audit fee and real income smoothing: evidence from quoted non-financial firms in Nigeria

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Abstract

Purpose – The study investigated the relationship between residual audit fee and real income smoothening, proxied as real operating cash flow and production expenditure smoothing of non-financial firms in Nigeria.
Design/methodology/approach – The study relied on secondary data from annual financial statements of 75 firms in the non-financial sector from 2010 to 2019. The study estimated the residual audit fee using a modified model from several contexts to suit the Nigerian environment. The hypotheses were tested using the dynamic panel GMM estimation procedure.
Findings – The results showed a significant negative effect of residual audit fee on (real) operating cash flow smoothing and production expenditure smoothing of non-financial firms. The control variables showed mixed effects for the industry-related (firm size and profitability), auditor attribute (audit quality and audit report lag) and the board related (board size and board independence).
Research limitations/implications – The firms included in the analysis were selected based on data availability from MachameRatios® and the occurrence of missing values for some of the variables used in the various estimation models may bias results.
Practical implications – The study identifies the nexus between RAF and real earnings management practices of non-financial firms; and shows the implication of fee payment to the overall conduct of the audit. More so, the mixed findings from the CVs suggest that in the context of developing economies, shareholders and capital markets regulators should be watchful of residual audit fees and utilise it as a gauge for audit quality and also an indicator of opportunism and weak internal control in the firm in the future assessments.
Social implications – The implication of the study stems from its relevance to the capital market stability and the potential negative disastrous effect of corporate failure from earnings management practices.
Originality/value – The study develops a newly residual audit fee model to explore the effect of RAF on real income smoothing rather than the widely used models from prior literature; secondly, the focus on real activities manipulation may present additional evidence that applies to developing countries rather the widely used accrual measurement technique from an economic bonding perspective.

Keywords Earnings management, Real earnings management, Abnormal audit fee, Abnormal operating cashflow, Abnormal production expenditure

Paper type Research paper

Note: Supplementary materials that are included in the article are available online.

1. Introduction

The requirement for external audit in Nigeria is enshrined in Section 357 (1) of the Companies and Allied Matters Act (2004) Cap C20, that "Every company shall at each annual general meeting appoint an auditor or auditors to audit the financial statements of the company". The principal-agent structure of modern corporations often leads to information asymmetry and differing motives among parties significantly contributed to the evolution of modern-day audits. Often cited benefits of the external audit includes: the reduction of information risk, curbing management malfeasance, regulatory risk and compliance, contractual purposes (Carey *et al.*, 2000), for other stakeholder engagement (DeAngelo, 1981), debt covenants, among others. At the commencement of the audit, the audit firm (partner) agrees/negotiates a fee with the client for the services to be performed. An audit fee is an amount paid by a company to an external auditor in exchange for performing an audit (The Financial Dictionary, 2018). The audit fee is disclosed in the firm's annual financial report (i.e. notes to the account in the Nigerian context).

The financial reporting quality of a firm is affected by earnings manipulation. Income smoothing is a form of earnings manipulation. The earnings quality is affected by managerial use of accrual or real income smoothing techniques in a bid to deceive investors. The FASB Statement of Concepts No. 1, Paragraph 37, states ". . . financial reporting should provide information to help investors, creditors, and others assess the amounts, timing and uncertainty of prospective net cash inflows to the related enterprise". Thus income smoothing techniques distort timing and certainty and consequently lead to investment inefficiency. Real income smoothing involves decisions that are directly related to cash flows (Goel and Thakor, 2003). According to Goel and Thakor (2003), income smoothing involves the "intertemporal smoothing" of reported earnings. The objective is to level out fluctuations in reported earnings among periods. Managers utilise real income smoothing for its relative difficulty in detection (Cohen *et al.*, 2008), linked to operating decisions and usually not in violation of rules or regulations (Ibrahim *et al.*, 2020). The external auditor is a third party with access to private information not available to other market participants. It is suggestive that the quality of services should enable a critical assessment of financial reporting quality.

Authors have suggested that the audit fee is a signal of the quality of services performed, and therefore an indicator of financial reporting quality (Abernathy *et al.*, 2018). The perspective on this supports the fact that a high audit fee may be synonymous with a high-quality audit. For instance, Choi *et al.* (2010) found evidence that auditors' incentive in enhancing financial reporting quality depends on the audit fee paid by a client in comparison with the industry average. In comparison with the industry average, authors have modelled either a positive abnormal or negative abnormal audit fee (Choi *et al.*, 2010; Ratnasari, 2021; Zhang, 2017). Ratnasari (2021) defines positive abnormal audit fees as "the residual results of the audit fee model that are positive"; and, the negative abnormal audit fees "are the residual result of the audit fee model that is negative".

Another perspective argues that the abnormal audit fees more especially way beyond the industrial average may create an economic bond between the auditor and the client which can compromise the independence of the auditor. The study by Zhang (2017) found that the positive abnormal audit fee increases the economic bond between both parties and is thus likely to impair auditor independence. The study by Knechel *et al.* (2013), using Swedish data found evidence to support the fact that economic bonding impaired auditor independence.

Several large scale corporate scandals and failures, such as Enron and WorldCom saga, Cadbury, African Petroleum, as well as the major bank, collapses in Nigeria were indicative of the wide disparity between reported and actual earnings information. The fact is further

made worrisome that the majority of these corporations were publicly quoted and subject to the scrutiny of external auditors.

Prior studies have been conducted in western countries; such as Blankley *et al.* (2012), Gupta *et al.* (2009) in the United States; Xie *et al.* (2010) in China; Krauß *et al.* (2015) in Germany; etc. Therefore, it can be substantiated from the literature that residual audit fee (RAF) (i.e. *high or low*) affects the financial reporting quality. The quality of financial reports is dependent on the value of accounting earnings (Herath and Albarqi, 2017). Therefore, the study examines the nexus of RAFs and real income smoothing among quoted non-financial in Nigeria. The study employs models developed by Cohen and Zarowin (2010) to proxy ROCFS and RPEXS, in addition to seven control variables (CVs) to control for the relationship between RAFs and real income smoothing in non-financial firms.

The first contribution of the study is the development of a new model to determine the RAF in constraining or assisting earnings management in a large sample of non-financial firms. Recently authors have called for more specialised audit models in the context of developing economies to be added to the audit fee literature with relatively few attempts currently made (Abozaid *et al.*, 2020). Additionally, the non-financial sector plays a vital role in the development of the Nigerian economy and represents more than 40% of quoted firms on the Nigerian Stock Exchange, and the government has implemented several policy measures including the IFRS requirement in 2012 which is a significant deterrent to accruals earnings management. Arguably, the sector from an agency angle is believed to have a wider degree of dispersed ownership which makes monitoring difficult for shareholders and managers utilising real earnings management while basking under the euphoria of a weak regulatory environment which is a characteristic of developing economies.

Secondly, the authors address the issue of endogeneity, in the model applied a dynamic panel data modelling technique. The results are shown in the section under the hypotheses test. The GMM estimator follows the works of Blundell and Bond (1998), Arellano and Bover (1995) and Arellano and Bond (1991), to improve the systematic modelling procedure of the OLS and the fixed-effects model. The technique was therefore employed for three main reasons: First, applying the fixed or OLS to the static model reveals that RAF had a positive influence on real operating cash flow smoothing of non-financial firms; while the RAF had a negative statistically significant relationship with the real production expenditure smoothing of non-financial firms. The models also included prior period indicators of the dependent variable with the former reflecting a higher R^2 value than the latter (i.e. ignoring unobservable heterogeneity). This accounts for the fixed effects ability of GMM to deal with the issue of unobservable heterogeneity stands out. Second, unlike OLS, the GMM allows the current real income smoothing to be influenced by prior periods' outcomes. Third, is the possibility to use a vector of internal instruments available within the panel itself to deal with the issue of simultaneity. Therefore past values of income smoothing, RAF, firm [performance, and board related data can be used as instruments eliminating the need for external instruments. The GMM result showed that variable of interest, i.e. RAF had a negative coefficient in both models.

Thirdly, the study takes into consideration a vast range of variables that cover audit, firm-specific and board-related factors to examine their effect on real income smoothing. The study extends prior works which mainly utilise audit fees to surrogate for audit quality. Thus, the current study uses a two-stage approach; first, applying the modified RAF model to determine the abnormal audit fee and using the residual of the model for estimations in two other models. This technique deviates from that employed by Mustapha *et al.* (2019) that used the natural logarithm of audit fees to proxy audit quality.

Lastly, the study using unique proprietary data provides additional evidence that contributes to the growing body of literature on the effect of RAFs in the Nigerian context.

2. Literature review

2.1 Theoretical review and hypotheses development

2.1.1 Audit fees. An audit fee is an amount charged by an auditor for an audit assignment carried out (Onaolapo *et al.*, 2017). It is "the amount charged by auditors for any work done to express an opinion on the true and fairness of client's performance and position" (Onaolapo *et al.*, 2017, p. 10). The International Federation of Accountants (IFAC) ethical code, the audit fee is determined by acknowledging the circumstances the audit is performed, the skills and knowledge required by the auditor, as well as the competence level of the auditor. Other factors include the time needed to perform the audit, and the political and economic situation, among others. The appropriate basis of assessment is either an hourly or daily rate for the work performed by the auditor.

The average industry audit fee is known as the *normal* audit fee, while the fees above or below the average in the industry are known as *abnormal* fees. According to Kinney and Libby (2002), abnormal audit fees capture the economic bond of auditors to a specific client more than normal or actual audit fees. The abnormal audit fee is often estimated as the residual of the total audit fees using the regression technique or finding the difference between the actual audit fee and the average audit fee for an industry. When the audit fee is higher than the average or normal audit fee, it is a positive abnormal audit fee. It is a negative abnormal audit fee if the audit fee is lower than the normal or average audit fee or what the auditor would have charged in the ordinary course of engagement (Oladipupo and Monye-Emina, 2016). Whereas normal audit fees are determined by factors that are common across different clients (e.g. client size, client complexity and client-specific risk), abnormal audit fees are determined by factors that are idiosyncratic to a specific client (Kasai, 2014).

2.1.2 Income smoothing. An age-long definition of income smoothing is the managerial attempt to exercise reporting discretion to "intentionally dampen the fluctuations of their firms' earnings realizations" (Beidleman, 1973, p. 653). Pratt (2000, p. 750) opines that it is the "extent to which net income reported on the income statement differs from true earnings". As stated by Gay and Simnett (2012, p. 298) it is a special approach that "affects the transparency of underlying economic reality and stakeholder decisions in the allocation of scarce resources". The idea behind real income smoothing involves earnings management through real operations manipulation to revise the reported earnings (Mussalo, 2015). That is, adjusting the timing and/or scale of the business activities. Examples of REM include: (1) increasing sales by offering price discounts or through more lenient credit terms, (2) Overproduction to report the lower cost of goods; and (3) decreasing discretionary expenses, such as research and development (R&D) or advertising expenditure (Cohen *et al.*, 2008). The manipulation methods can be also categorised based on activity type: manipulation of operating, investing or financing activities (Mussalo, 2015).

There are two perspectives on the effect of abnormal high audit fees: *first*, is the perspective that increases audit quality, such as Greiner *et al.* (2017) finds that increased audit effort combined with increased business risk drive future pricing effect. Consistent, with Cho *et al.* (2017) auditors increase their audit efforts by modifying audit procedures and substantive tests and charge higher fees for increased cash flow risk. However, Choi *et al.* (2018) documented that the positive relationship is more pronounced for firms with financial constraints. Second, is the perspective that such abnormal audit fees tying the auditor to be non-independent from the client thereby compromising the auditor's independence. Chi *et al.* (2011) find evidence that high audit fees are associated with higher levels of real earnings management. From a different perspective, Salehi *et al.* (2022) using empirical data from Tehran finds that real earnings management was negatively associated with audit report readability. Moreover, Seifzadeh *et al.* (2022) find that real earnings management was significantly associated with financial statement comparability.

2.1.3 Residual audit fee and real operating cash flow smoothing. The negative association between audit fees is indicative of the economic bonding effect between the clients and auditors that may cause an independence breach on the part of auditors, thereby negatively affecting audit quality (Kinney and Libby, 2002). The prior literature documents mixed findings on the issue across different countries. For instance, Martinez and Moraes (2017) using a sample of 300 firms listed on the BM&FBovespa, Brazil for the period 2009 to 2012 showed a negative relationship between the cash flow and earnings management. Using a sample of 88 firms in Nigeria, Bala *et al.* (2018) revealed that higher audit fees are associated with a lower level of discretionary accruals; and, Choi *et al.* (2010) found an asymmetric relationship between unexpected (abnormal) audit fees and abnormal accruals. The results showed that abnormal audit fees are negatively associated with abnormal accruals for observations with positive values; whereas, no significant relationship exists for observations with negative values. Others find mixed results depending on the earnings management proxy. Bryan *et al.* (2018) using a unique data set of 10,510 firm-year observations from 1,994 unique firms; from the period 2004 to 2012 showed a negative (positive) association between earnings autocorrelation (volatility) and audit fees. Yet others report a positive relationship.

Using a sample of US firms, Choi *et al.* (2018) found that real earnings management is positively related to audit fees; while, Kasai (2014) investigated the association between abnormal audit fees and accrual quality using 6,302 observations from March 2004 to March 2007 showed that (total) audit fees had a significant positive effect on accruals quality; secondly, there is a negative insignificant association between (abnormal) audit fees and accrual quality in firms with significant financial institutions' shareholdings. Abernathy *et al.* (2018) found both negative and positive effects. Specifically, RAFs are negatively associated with the ability of current earnings to predict future earnings and analyst forecast accuracy but positively associated with the dispersion in analyst forecasts. Based on the above statements, the study proposes the following hypothesis:

H1. RAF has a significant relationship with real operating cash flow smoothing of manufacturing firms.

2.1.4 Residual audit fee and real production expenditure smoothing. Gupta *et al.* (2011) provide evidence that earnings management is greater in firms that pay lower audit fees, i.e. below the level of expected fees relative to other firms. Using empirical data from the US from the period 2008 to 2014, Mussalo (2015) showed that earnings manipulation through sales manipulation and overproduction are inversely associated with the audit fee, suggesting that higher-quality auditors decrease earnings manipulation practices. Alhadab (2018) examined the relationship between abnormal audit fees and accrual and real-based earnings management in the UK. The sample comprised 1,055 firm-year observations from the period 2006 to 2015. The study employed linear regression to test the hypothesis. The results showed that abnormal audit fees were negatively associated with real earnings management. The abnormal audit fees were found to be negatively associated with abnormal discretionary expenses, abnormal production costs and the aggregated measure of real earnings management. Greiner *et al.* (2017) showed that except for SG&A, aggressive income increasing real earnings management is positively associated with both current and future audit fees.

However, Hope and Langli (2010) find no association between large (and positive) fee residuals and auditors' propensity to issue going-concern opinions for Norwegian companies. Abozaid *et al.* (2020) examined the impact of audit quality on narrative disclosure in Egypt. The sample comprised 115 firms listed on the Amman Stock Exchange (ASE). They utilised secondary data from annual reports over the period 2009 to 2016. The data were analysed using the binary logistic regression technique. The results showed a positive statistically

significant effect of audit fees on the probability of violation. Studies conducted in Nigeria previously however showed a positive relationship. Ibrahim and Ali (2018) studied four conglomerate companies for a period of 12 years (2004–2015). The data which were analysed using panel data methods showed that audit fees had a positive non-significant effect on audit quality (discretionary accruals). Based on the above statements, the study proposes that:

H2. There is a significant relationship between RAF and real production expenditure smoothing of manufacturing firms.

2.2 Theoretical framework
The study is anchored on the economic bonding hypothesis, which suggests that the more the auditor charges through fees will impair the auditor's independence and thus reduce the quality of the audit quality (Ashtana and Boone, 2012; Chi *et al.*, 2011). Audit fees create an economic bond between auditor and client (DeAngelo, 1981). Thus, the firm can comprise the independence of the auditor as an independent monitoring party from exceptionally high audit fees and leaving room for managers to exploit the loopholes for opportunistic acts. Francis and Ke (2006) suggest that excessive (non)audit fees paid to auditors may be perceived by investors to compromise auditor independence and hence result in a lower earnings response coefficient.

3. Methodology
3.1 Study sample and data collection
The present study focuses specifically on non-financial firms in Nigeria. The population comprised all quoted non-financial firms on the Nigerian Stock Exchange (NSE) during the study period (Appendix 1). The initial number of firms included in the study was 97 drawn from 10 sectors (see Appendix 1). The study relied on secondary data from annual financial reports and accounts period which spanned the financial years from December 2010 to December 2019. The final sample comprised 75 non-financial firms after excluding firms with non-consistent and up to date financial information quoted on the NSE. The selected firms are shown in Appendix 2.

Appendix 1 is available online at: https://www.dropbox.com/scl/fi/iewe0k11yz95lx9k2a301/Appendix-I-II-III.docx?dl=0&rlkey=p9qtor3pac0ltfaq00qj8u3xp

3.2 Variables description
The current study explores the link between RAF and real income smoothening in the Nigerian context.

3.2.1 Residual audit fee. The RAF is measured using a model developed from the literature review. The final model was checked for multicollinearity with a resulting mean variance inflation factor (VIF) of 2.31 (See Appendix 3). The model is an indicator of the (1) company size, (2) auditor characteristics, (3) client risk and (4) regulatory environment, and is estimated as the residual of the following model (Motavassel *et al.*, 2022; Gandía and Huguet, 2021; Su *et al.*, 2007):

$$\text{LnFEE}_{i,t} = \beta_0 + \beta_1 \text{IFRS}_{i,t} + \beta_2 \text{Big}\,4_{i,t} + \beta_3 \text{LASSET}_{i,t} + \beta_4 \text{LSALES}_{i,t} + \beta_5 \text{LEV}_{i,t}$$
$$+ \beta_6 \text{ROA}_{i,t} + \beta_7 \text{Age}_{i,t} + \beta_8 \text{AUSW}_{i,t} + \beta_9 \text{CFOA}_{i,t} + \varepsilon_{i,t}$$

where:

LnFEE: Natural logarithm of audit fees

IFRS: Dummy variable is shown as 0 for years prior to 2012 and 1 afterwards

Big 4: 1 if a firm is audited by Deloitte and Touche, Ernst and Young, KPMG or PricewaterhouseCoopers, and 0 otherwise

LASSET: The natural logarithm of total assets

LSALES: The natural logarithm of total sales

LEV: The ratio of debt to equity

ROA: Return on assets (profit after tax/total assets)

Age: The difference between current years minus the year of listing on the stock exchange + 1

AUSW: Auditor Switch is computed as "1" for companies that change external auditor in a particular year and "0" otherwise

CFOA: Cash flow from operations to asset in percentage is computed as net cash flow from operations divided by Total asset

β_0 Constant

β_1–β_9 Estimated model coefficients

$\varepsilon_{i,t}$ Error term representing abnormal audit fees for firm i at time t.

Appendix 2 is available online at: https://www.dropbox.com/scl/fi/iewe0k11yz95lx9k2a301/Appendix-I-II-III.docx?dl=0&rlkey=p9qtor3pac0ltfaq00qj8u3xp

The literature has suggested that the inclusion of audit-related factors in the model may present problems which be addressed using a fixed-effects (FE) regression estimation (Gandía and Huguet, 2020; Zaman Groff *et al.*, 2017).

3.2.2 Real income smoothing measures.

(1) The first proxy is the ROCFS, which is estimated using the following cross-sectional regression model for each industry and year (Cohen and Zarowin, 2010). The abnormal portion is the actual CFO minus the normal level of CFO calculated using the estimated co-efficients (Cohen and Zarowin, 2010).

$$\frac{\text{CFO}_{it}}{\text{Assets}_{it-1}} = \beta_0 \frac{1}{\text{Assets}_{it-1}} + \beta_1 \frac{\text{Sales}_{it}}{\text{Assets}_{it-1}} + \beta_2 \frac{\Delta\text{Sales}_{it}}{\text{Assets}_{it-1}} + \varepsilon_{it}$$

CFO_{it} is the operating cash flow information from the Statement of Cash flows; Assets $_{it-1}$ is the lag of assets (total assets) from the Statement of Financial Position; Sales_{it} is the yearly reported revenue from the Statement of Comprehensive Income; ΔSales_{it} is the change in revenue computed from Statement of Comprehensive Income.

(2) The second proxy is the RPEXS, is estimated using the following cross-sectional regression model for each industry and year (Cohen and Zarowin, 2010). The abnormal portion is actual production expenditure minus the normal level of production expenditure calculated using the estimated coefficients (Cohen and Zarowin, 2010).

$$\frac{\text{PROD}_{it}}{\text{Assets}_{it-1}} = \beta_0 \frac{1}{\text{Assets}_{it-1}} + \beta_1 \frac{\text{Sales}_{it}}{\text{Assets}_{it-1}} + \beta_2 \frac{\Delta\text{Sales}_{it}}{\text{Assets}_{it-1}} + \beta_3 \frac{\Delta\text{Sales}_{it-1}}{\text{Assets}_{it-1}} + \varepsilon_{it}$$

PROD$_{it}$ is the cost of production expenditure from the Statement of Comprehensive Income; Assets$_{it-1}$ is the lag of assets (total assets) from the Statement of Financial Position; Sales$_{it}$ is the yearly reported revenue from the Statement of Comprehensive Income; ΔSales$_{it}$ is the change in revenue computed from Statement of Comprehensive Income; and; ΔSales$_{it-1}$ is the lagged change in revenue computed from Statement of Comprehensive Income.

3.3 Test of hypotheses

The study employs the dynamic generalised method of moments (GMM) panel specifications to address the issue of endogeneity (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998). Studies have shown that this technique can overcome the problems introduced by unobservable heteroskedasticity, simultaneity and dynamic endogeneity. In addition, the descriptive statistics which include: mean, median, minimum and maximum values, standard deviation, skewness, kurtosis and the Jarque–Bera statistic were also computed.

3.3.1 Model specification.

$$\text{ROCFS}_{it} = \gamma_0 + \gamma_1\text{ROCFS}_{it-1} + \gamma_2\text{RAF}_{it} + \gamma_3\text{Big 4}_{it} + \gamma_4\text{ADLY}_{it} + \gamma_5\text{LASSET}_{it} + \gamma_6\text{LEV}_{it}$$
$$+ \gamma_7\text{ROA}_{it} + \gamma_8\text{BODS}_{it} + \gamma_9\text{BODI}_{it} + u_i$$

(1)

$$\text{RPEXS}_{it} = \gamma_0 + \gamma_1\text{RPREXS}_{it-1} + \gamma_2\text{RAF}_{it} + \gamma_3\text{Big 4}_{it} + \gamma_4\text{ADLY}_{it} + \gamma_5\text{LASSET}_{it}$$
$$+ \gamma_6\text{LEV}_{it} + \gamma_7\text{ROA}_{it} + \gamma_8\text{BODS}_{it} + \gamma_9\text{BODI}_{it} + u_i$$

(2)

where:

ROCFS–Real Operating Cash flow Smoothing

RPEXS–Real Production Expenditure Smoothing

RAF–Residual Audit Fee

Big 4–1 if a firm is audited by Deloitte and Touche, Ernst and Young, KPMG or PricewaterhouseCoopers, and 0 otherwise

ADLY–Audit Report Timeliness

LASSET–The logarithm of total assets

LEV–Leverage

ROA–Return on Assets

BS–Board Size

BIND–Board Independence

γ_0 is the intercept and u_i is the error term while i and t correspond to firms and years.

The model includes a set of CVs used in previous literature. Big 4, dummy variable set at 1 for companies audited by a Big 4 auditor and 0 otherwise. The literature shows that the Big 4 affect the level of earnings management (Cabal-García *et al.*, 2019); ADLY, is measured as the difference in the date between when an external auditor signs a company's annual audited report and the company accounting year-end date. LASSET as previously defined is the natural logarithm of total assets. It has been utilised in the study by Gandía and Huguet (2021) and Mustapha *et al.* (2019). LEV is a financial indicator which is the ratio of total debt to

total assets which have been employed in Mustapha *et al.* (2019) and Gandía and Huguet (2021). The ROA, i.e. return on assets measured as the ratio of profit after tax to total assets. This profitability measure has been employed by Mustapha *et al.* (2019) and Gandía and Huguet (2021). In addition, prior studies also utilise board-related information. We specifically study board size, i.e. the total number of directors sitting on the board as of fiscal year-end and BIND, the proportion of non-executive directors to total directors as of the financial year-end. These two measures are arguably prime to the effectiveness of board monitoring (supervision) and curtailing earnings management (Jensen, 1993; Lipton and Lorsch, 1992). The study makes the following apriori expectations: RAF (−), Big 4 (−), ADLY (+), LASSET (+), LEV (+), ROA (−), BODS (+) and, BODI (+).

4. Data analysis
The final sample comprised 75 non-financial firms retrieved from the MachameRatios Database® from 2010 to 2019. The study period was for a period of ten years, starting from 2010 to 2019. The descriptive statistics show the main summary statistics of the variables; while, the correlation matrix shows the relationship between the variables of interest.

Tables 1 and 2 are available online at: https://www.dropbox.com/scl/fi/so4imxozngag88gwtq1b5/Descriptive-Statistics-Correlation-Matrix.docx?dl=0&rlkey=vdk6xeyb6uu7o0tq0k8iz0l2k

4.1 Test of hypotheses
The authors further addressed the issue of endogeneity by using the Dynamic Panel Data (DPD) procedure in E-Views software version 10.

4.1.1 Hypothesis one.

H1. RAF has a significant relationship with real operating cash flow smoothing of manufacturing firms.

Test of hypothesis one is available online at: https://www.dropbox.com/s/vixch78ry0j779s/Hypothesis%20One-AJAR.docx?dl=0

4.1.1.1 Interpretation. The GMM model output with one IV, the RAF, the lagged dependent variable, i.e. ROCFS with seven CVs, i.e. Big 4, audit report timeliness (ADLY), logarithm of total assets (LASSET), firm leverage (LEV), return on assets (ROA), board size (BS) and board independence (BIND). The coefficient of the variable of interest, i.e. RAF, RAF had a p-value = 0.0149 which led to a rejection of the null and acceptance of the alternate. Therefore, the RAF had a negative statistically significant effect on real operating cash flow smoothing (ROCFS). The lag of ROCFS was also negative and significant in the DPD model.

Appendix 3 is available online at: https://www.dropbox.com/scl/fi/iewe0k11yz95lx9k2a301/Appendix-I-II-III.docx?dl=0&rlkey=p9qtor3pac0ltfaq00qj8u3xp

4.1.2 Hypothesis two.

H2. There is a significant relationship between RAF and real production expenditure smoothing of manufacturing firms.

Test of hypothesis two is available online at: https://www.dropbox.com/s/sb1bbkh43lxsg1q/Hypothesis%20Two-AJAR.docx?dl=0

4.1.2.1 Interpretation. The GMM model output with one IV, the (RAF, the lagged dependent variable, i.e. RPEXS with seven CVs, i.e. Big 4, audit report timeliness (ADLY), logarithm of total assets (LASSET), firm leverage (LEV), return on assets (ROA), board size (BS) and board independence (BIND). The coefficient of the variable of interest, i.e. RAF, RAF had a p-value = 0.0000 which led to a rejection of the null and acceptance of the alternate. Therefore, the RAF had a negative statistically significant effect on real production

expenditure smoothing (RPEXS). The lag of RPEXS was also negative and significant in the DPD model.

4.2 Results discussion
The above results confirm prior studies on the subject. Prior, studies in developed economies have shown that auditors that receive abnormally high audit fees are more likely to have their independence compromised (Abozaid *et al.*, 2020; Krauß *et al.*, 2015). The first hypothesis found a significant negative effect of RAF on real operating cash flow smoothing; and, the second showed a significant negative effect of RAF on real production expenditure smoothing of non-financial firms. This is consistent with Kinney and Libby (2002, p. 109) claim that "unexpected audit and non-audit fees may more accurately be likened to attempted bribes". This is also consistent with the study by Markelevich and Rosner (2013), which reported that fraudulent firms were more likely to pay higher fees for non-audit services.

The first hypothesis is consistent with the study by Su *et al.* (2007), which found a negative relationship between audit fees and earnings informativeness. Similarly, Alhadab (2018) using empirical data from the UK, found that abnormal audit fees were negatively associated with real earnings management. Using empirical data from China Xie *et al.* (2010) and the audit opinion as an indicator of accounting quality found that in firms with profitability not above the 75th percentile, the coefficient of abnormal audit fee was negative but not statistically significant. However, in the Nigerian context, the study by Odum *et al.* (2021), reported a non-significant negative effect of audit fee on abnormal operating cash flow. Hermawan and Adinda (2012), in Indonesia also established a significant negative association between audit fees and earnings management. Salehi *et al.* (2017) finds that abnormal audit fees negatively associated with future financial restatements.

Mustapha *et al.* (2019), found evidence that a unit increase in audit fee reduces earnings management among manufacturing firms. In contrast, Onaolapo *et al.* (2017) used empirical data from the cement sector to show that audit fees had a significant positive effect on audit quality. The study by Martinez and Moraes (2017) using a sample of 300 firms listed on the BM&FBovespa, Brazil for the period 2009 to 2012 also showed a positive relationship between abnormal audit fees and discretionary accruals; a non-significant positive relationship between non-audit fees and discretionary accruals.

The second hypothesis is suggestive of the fact that production expenditures are subject to managerial discretion and therefore increasingly used for real activities manipulation. Therefore audit firms are more likely to overlook manipulations with higher fees. The negative finding supports the study by Alhadab (2018) in the UK, which found abnormal audit fees to be negatively associated with abnormal production costs. In Germany, Krauß *et al.* (2015) using a large sample of 841 firms listed on the Frankfurt Stock Exchange showed that positive abnormal audit fees are negatively associated with audit quality; whereas, negative abnormal audit fees had a statistically weak positive effect on audit quality. The study by Eriabie and Dabor (2017), using a sample of banks in Nigeria from 2005 to 2010 found a negative association between audit quality and earnings management. The results are in contrast with the study by Odum *et al.* (2021), which reported a non-significant positive effect of audit fees on abnormal production expenditure operating cash flow. Greiner *et al.* (2017) also found that real earnings management is positively associated with both current and future audit fees. Donatella *et al.* (2019) using a sample of Swedish municipalities showed that the probability for earnings management increases with audit fees increase. This was supported by Kantudu and Samaila (2015) using a sample of banks between 2010 and 2015 that showed a significant positive relationship between audit fees and audit quality.

5. Conclusion and recommendations

The study concludes that the RAF model was a reflection of the level of real income smoothing of quoted non-financial firms as substantiated by the empirical results. The results showed evidence of a non-significant negative effect of RAF on real operating cash flow smoothing and a non-significant positive effect on real production expenditure smoothing. The study contributes to the literature by making clearer the effect of RAFs (high vs. low) on the auditors' independence and its potential to constrain managerial opportunistic behaviour. The study, therefore, makes the following recommendations:

The policymakers and capital market regulators should institutionalise policies which strengthen the regulatory environment in the context of developing economies and to further improve transparency. This would have the effect of serving as a deterrent to real activity manipulations by firms. Secondly, the stock exchange and corporate affairs commission should be watchful of the audit fees as an indicator of managerial malpractice and a high-risk level to which the audit firm is exposed. This should be taken into consideration in the formulation of capital market policies to avert malignant fees which can compromise independence. Shareholders should not necessarily utilise the audit fees to gauge audit quality in the context of developing economies as weak regulatory regimes may expose the management to opportunism, while, weak internal control in the firm is not exposed by external auditors in future assessments.

References

Abernathy, J.L., Kang, T., Krishnan, G.V. and Wang, C. (2018), "Is there a relation between residual audit fees and analysts forecasts?", *Journal of Accounting, Auditing and Finance*, Vol. 33 No. 3, pp. 299-323.

Abozaid, E.M., Elshaabany, M.M. and Diab, A.A. (2020), "The impact of audit quality on narrative disclosure: evidence from Egypt", *Academy of Accounting and Financial Studies Journal*, Vol. 24 No. 1, pp. 1-14.

Alhadab, M. (2018), "Abnormal audit fees and accrual and real earnings management: evidence from UK", *Journal of Financial Reporting and Accounting*, Vol. 16 No. 3, pp. 395-416.

Arellano, M. and Bond, S. (1991), "Some tests of specification for panel data: monte Carlo evidence and an application to employment equation", *Review of Economic Studies*, Vol. 58, pp. 277-297.

Arellano, M. and Bover, O. (1995), "Another look at the instrumental variable estimation of error component models", *Journal of Econometrics*, Vol. 68, pp. 29-51.

Ashtana, S.C. and Boone, J.P. (2012), "Abnormal audit fee and audit quality", *Auditing: A Journal of Practice and Theory*, Vol. 31 No. 3, pp. 1-22.

Bala, H., Amran, N.A. and Shaari, H. (2018), "Audit fees and financial reporting quality: a study of listed companies in Nigeria", *International Review of Management and Business Research*, Vol. 7 No. 2, pp. 482-489.

Beidleman, C. (1973), "Income smoothing: the role of management", *The Accounting Review*, Vol. 48 No. 4, pp. 653-667.

Blankley, A.I., Hurtt, D.N. and MacGregor, J.E. (2012), "Abnormal audit fees and restatement", *Auditing: A Journal of Practice and Theory*, Vol. 31 No. 1, pp. 79-96.

Blundell, R. and Bond, S. (1998), "Initial conditions and moment restrictions in dynamic panel data models", *Journal of Econometrics*, Vol. 87, pp. 115-143.

Bryan, D.B., Mason, T.W. and Reynolds, J.K. (2018), "Earnings autocorrelation, earnings volatility, and audit fees", *Auditing: A Journal of Practice and Theory*, Vol. 37 No. 3, pp. 47-69.

Cabal-García, E., De-Andrés-Suarez, J. and Fernández-Méndez, C. (2019), "Analysis of the changes in Spanish auditing regulation on audit quality and its differential effect depending on the type of auditor", *Revista de Contabilidad*, Vol. 22 No. 2, pp. 171-186.

Carey, P., Simnett, R. and Tanewski, G. (2000), "Voluntary demand for internal and external auditing by family businesses", *Auditing: A Journal of Practice and Theory*, Vol. 19 No. 1, pp. 37-51.

Chi, W., Lisic, L.L. and Pevzner, M. (2011), "Is enhances audit quality associated with greater real earnings management?", *Accounting Horizons*, Vol. 25 No. 2, pp. 315-335.

Cho, M., Ki, E. and Kwon, S.Y. (2017), "The effects of accruals quality on audit hours and audit fees", *Journal of Accounting, Auditing and Finance*, Vol. 32 No. 3, pp. 372-400.

Choi, J.-H., Kim, J.-B. and Zang, Y. (2010), "Do abnormally high audit fees impair audit quality?", *Auditing: A Journal of Practice and Theory*, Vol. 29 No. 2, pp. 115-140.

Choi, A., Sohn, B.C. and Yuen, D. (2018), "Do auditors care about real earnings management in their audit fee decisions?", *Asia-Pacific Journal of Accounting and Economics*, Vol. 25 Nos 1-2, pp. 21-41, doi: 10.1080/16081625.2016.1231580.

Cohen, D.A. and Zarowin, P. (2010), "Accrual-based and real earnings management activities around seasoned equity offerings", *Journal of Accounting and Economics*, Vol. 50 No. 1, pp. 2-19.

Cohen, D.A., Dey, A. and Lys, T.Z. (2008), "Real and accrual-based earnings management in the pre-and-post-Sarbanes-Oxley periods", *The Accounting Review*, Vol. 83 No. 3, pp. 757-787.

DeAngelo, L.E. (1981), "Auditor size and audit quality", *Journal of Accounting and Economics*, Vol. 3 No. 3, pp. 183-199.

Donatella, P., Haraldsson, M. and Tagesson, T. (2019), "Do audit firm and audit costs/fees influence earnings management in Swedish municipalities?", *International Review of Administrative Sciences*, Vol. 85 No. 4, pp. 673-691, doi: 10.1177/0020852317748730.

Eriabie, S. and Dabor, E.L. (2017), "Audit quality and earnings management in quoted Nigerian banks", *Journal of Accounting, Finance and Auditing Studies*, Vol. 3 No. 1, pp. 1-16.

Francis, J.R. and Ke, B. (2006), "Disclosure of fees paid to auditors and the market valuation of earnings surprises", *Review of Accounting Studies*, Vol. 11 No. 4, pp. 495-523.

Gandía, J.L. and Huguet, D. (2020), "Audit fees and cost of debt: differences in the credibility of voluntary and mandatory audits", *Economic Research-Ekonomska Istraživanja*, Vol. 33 No. 1, pp. 3071-3092.

Gandía, J.L. and Huguet, D. (2021), "Audit fees and earnings management: differences based on the type of audit", *Economic Research-Ekonomska Istraživanja*, Vol. 34 No. 1, pp. 2628-2650.

Gay, G. and Simnett, R. (2012), *Auditing and Assurance Services in Australia*, McGraw-Hill, Sydney, NSW.

Goel, A.M. and Thakor, A.V. (2003), "Why do firms smooth earnings?", *The Journal of Business*, Vol. 76 No. 1, pp. 151-192.

Greiner, A., Kohlbeck, M.J. and Smith, T.J. (2017), "The relationship between aggressive real earnings management and current and future audit fees", *Auditing: A Journal of Practice and Theory*, Vol. 36 No. 1, pp. 85-107.

Gupta, P.P., Krishnan, G.V. and Yu, W. (2009), "You get what you pay for: an examination of audit quality when audit fees is low", Working Paper, Lehigh University.

Gupta, P., Krishnan, G. and Yu, W. (2011), "Do auditors allow earnings management when audit fees are low?", Working Paper, Lehigh University.

Herath, S.K. and Albarqi, N. (2017), "Financial reporting quality: a literature review", *International Journal of Business Management and Commerce*, Vol. 2 No. 2, pp. 1-14.

Hermawan, A.A. and Adinda, G. (2012), "The effect of board characteristics and audit committee existence on earnings quality of Indonesian state-owned enterprises", *SSRN Electronic Journal*, pp. 1-31, 2135051, doi: 10.2139/ssrn.2135051.

Hope, O.K. and Langli, J. (2010), "Auditor independence in a private firm and low litigation risk setting", *The Accounting Review*, Vol. 85 No. 2, pp. 573-605.

Ibrahim, M. and Ali, I. (2018), "Impact of audit fees on audit quality of conglomerates companies in Nigeria", *International Journal of Service Science, Management and Engineering*, Vol. 5 No. 1, pp. 1-8.

Ibrahim, A.E.A., Abdelfattah, T. and Hussainey, K. (2020), "Artificial and real income smoothing around corporate governance reforms: further evidence from Egypt", *Journal of Applied Accounting Research*, Vol. 21 No. 4, pp. 701-720.

Jensen, M.C. (1993), "The modern industrial revolution, exit, and the failure of internal control systems", *The Journal of Finance*, Vol. 48 No. 3, pp. 831-880.

Kantudu, A.S. and Samaila, I.A. (2015), "Board characteristics, independent audit committee and financial reporting quality of oil marketing firms: evidence from Nigeria", *Journal of Finance, Accounting and Management*, Vol. 6 No. 2, pp. 34-50.

Kasai, N. (2014), "Ownership structure, audit fees, and audit quality in Japan", *Shiga University Publication*, Vol. 33 No. 69, pp. 1-52.

Kinney, W.R. Jr and Libby, R. (2002), "Discussion of the relationship between auditors' fees for nonaudit services and earnings management", *The Accounting Review*, Vol. 77 Supplement, pp. 107-114.

Knechel, W.R., Niemi, L. and Zerni, M. (2013), "Empirical evidence on the implicit determinants of compensation in big 4 audit partnerships", *Journal of Accounting Research*, Vol. 51 No. 2, pp. 349-387.

Krauß, P., Pronobis, P. and Zülch, H. (2015), "Abnormal audit fees and audit quality: initial evidence from the German audit market", *Journal of Business Economics*, Vol. 85 No. 1, pp. 45-84.

Lipton, M. and Lorsch, J.W. (1992), "A modest proposal for improved corporate governance", *The Business Lawyer*, Vol. 48, pp. 48-59.

Markelevich, A. and Rosner, R.L. (2013), "Auditor fees and fraud firms", *Contemporary Accounting Research*, Vol. 30 No. 4, pp. 1590-1625, doi: 10.1111/1911-3846.12013.

Martinez, A.L. and Moraes, A.D.J. (2017), "Relationship between auditors' fees and earnings management", *Revista de Administracao de Empresas*, Vol. 57 No. 2, pp. 148-157.

Motavassel, M., Talebnia, G. and Yaghoubnezhad, A. (2022), "Effect of normal and abnormal audit fee and audit fee dependence on corporate social responsibility according stakeholder theory", *Journal of Value and Behavioral Accounting*, Vol. 6 No. 12, pp. 345-371.

Mussalo, V. (2015), "The effect of earnings management on audit fees: evidence from the manufacturing industry", Unpublished Master's Thesis, Department of Accounting, Aalto University, School of Business.

Mustapha, A.M., Rashid, N., Ado, A.B. and Ademola, L.S. (2019), "The effect of audit quality on accruals earnings management in Nigeria listed firms", *International Journal of Recent Technology and Engineering*, Vol. 8 No. 4, pp. 4894-4992.

Odum, A.N., Odum, C.G. and Chukwu, E.E. (2021), "Residual audit fees and earnings informativeness of quoted manufacturing firms in Nigeria", *Contemporary Journal of Management*, Vol. 3 No. 2, pp. 23-39.

Oladipupo, A.O. and Monye-Emina, H.E. (2016), "Do abnormal audit fees matter in Nigerian audit market?", *International Journal of Business and Finance Management Research*, Vol. 4, pp. 64-73.

Onaolapo, A.A., Ajulo, O.B. and Onifade, H.O. (2017), "Effect of audit fees on audit quality: evidence from cement manufacturing companies in Nigeria", *European Journal of Accounting, Auditing and Finance Research*, Vol. 5 No. 1, pp. 6-17.

Pratt, J. (2000), *Financial Accounting in an Economic Context*, 4th ed., South-Western College Publishing, Cincinnati, OH.

Ratnasari, H.D. (2021), "The effect of abnormal audit fee on audit quality", *JASA (Jurnal Akuntansi, Audit Dan Sistem Informasi Akuntansi)*, Vol. 5 No. 1, pp. 64-76.

Salehi, M., Farhangdoust, S. and Vahidnia, A. (2017), "Abnormal audit fees and future restatements: evidence from Tehran Stock Exchange", *International Journal of Accounting, Auditing and Performance Evaluation*, Vol. 13 No. 1, pp. 42-64.

Salehi, M., Zimon, G. and Seifzadeh, M. (2022), "The effect of management characteristics on audit report readability", *Economies*, Vol. 10 No. 1, p. 12.

Seifzadeh, M., Salehi, M., Khanmohammadi, M. and Abedini, B. (2022), "The relationship between management attributes and accounting comparability", *Journal of Facilities Management*, Vol. 20 No. 1, pp. 1-18.

Su, L., Srinidhi, B. and Gul, F.A. (2007), "Informativeness of earnings and accruals: evidence from audit pricing", available at: https://www.researchgate.net/publication/267848759.

The Financial Dictionary (2018), "Audit fee", available at: https://financial-dictionary.thefreedictionary.com/Audit+Fee.

Xie, Z., Cai, C. and Ye, J. (2010), "Abnormal audit fees and audit opinion-Further evidence from China's capital market", *China Journal of Accounting Research*, Vol. 3, pp. 51-70.

Zaman Groff, M., Trobec, D. and Iglicar, A. (2017), "Audit fees and the salience of financial crisis: evidence from Slovenia", *Economic Research-Ekonomska Istraživanja*, Vol. 30 No. 1, pp. 922-938.

Zhang, H.H. (2017), "The relationship of abnormal audit fees and accruals: bargain power or cost control?", *Open Journal of Accounting*, Vol. 6, pp. 82-94, doi: 10.4236/ojacct.2017.630.

Further reading

Hausman, J.A. (1978), "Specification tests in econometrics", *Econometrical*, Vol. 46, pp. 1251-1271.

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