Cogent Business & Management

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/oabm20

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To cite this article: Hussaini Bala, Waqar Ahmad, Ghousia Khatoon & Abubakar Balarabe Karaye (2022) Audit firm attributes and income smoothing: the moderating influence of audit committee accounting expertise, Cogent Business & Management, 9:1, 2127194, DOI: 10.1080/23311975.2022.2127194

To link to this article: https://doi.org/10.1080/23311975.2022.2127194

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Published online: 27 Sep 2022.

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Bala et al., *Cogent Business & Management* (2022), 9: 2127194
https://doi.org/10.1080/23311975.2022.2127194

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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Audit firm attributes and income smoothing: the moderating influence of audit committee accounting expertise

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Received: 04 December 2021
Accepted: 17 September 2022

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Reviewing editor:
David McMillan, University of Stirling, UNITED KINGDOM

Additional information is available at the end of the article

Abstract: This study investigates how audit committee accounting expertise (ACAE) influences the relationship between audit firm attributes (AUFA) and income smoothing (IS). The study employed 616 firm-year observations from 2013 to 2019 and robust logistic regression as a data analysis technique. The results showed that audit fees (AUF) are likely to decrease IS. The study also found that Big 4 auditors and audit tenure (AUT) might not reduce the likelihood of IS. Interestingly, Big 4 auditors and AUT had a negative and significant relation with IS in firms with a higher proportion of ACAE. The study revealed that a higher proportion of ACAE overturned the positive effect of Big 4 auditors and AUT on IS. The study provides a unique understanding of the moderating effect of ACAE on the link between AUFA and IS. The study makes distinctive contributions by exploring the moderating effect of ACAE on the link between AUFA and IS practices in Nigeria. Previous studies on income manipulation generally focus on accrual earnings; this study provides an insight into earnings manipulation through artificial smoothing indices. Policymakers and investors can benefit from the study's findings in formulating policies or decisions about corporate financial reporting issues. The study is limited to nonfinancial firms; therefore, the study's findings may not apply to financial firms.

Subjects: Accounting; Corporate Governance; Business Ethic

Keywords: Audit firm attributes income smoothing; audit committee accounting expertise

1. Introduction

Income smoothing (IS) is a "means through which management makes use of discretionary accounting and management principles to reduce earnings variability" (Aflatooni & Nikbakht, 2009, p. 61). Managers tend to smooth earnings to reduce the variability of the earnings disclosed in the financial reports to achieve personal or contractual benefits. The extant literature has documented two conflicting facts about the prevalence of IS. The first considers smoothness to be an important component of accounting profits. The second group believes that smoothing is an unlucky material in accounting profits that allows managers to serve their interests by hiding important facts (Shubita, 2015). Previous studies have viewed IS as either deceptive or informative. The proponents of an informative perspective view IS as an acceptable act because of its objective of maximising the benefits of the stockholders (Faraji et al., 2021; Kamarudin, Ismail & Yasin 2018). They argued that smoothness might function as a useful tool for management to maximise the benefits to investors, including lowering total corporation tax, preventing breaches of debt

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covenants, and lowering agency costs (Habib, 2005; Ismail & Kamarudin, 2018). According to proponents of the deceitful approach, IS is less informational and hence misleading.

Consequently, managers are more likely to smooth income not by providing information but simply using it as an illusory device to manipulate accounting information to suit their interests (Amat & Gowthorpe, 2004). This supports the notion of intentionally smoothed income which arises from artificial smoothing procedures (Eckel, 1981). Therefore, IS is viewed as unethical under accounting principles, irrespective of whatever reasons motivate the managers to practice it. Prior literature suggests that an audit is an autonomous guarantee of the reliability of financial reports, which increases the preservation of shareholders' interests and their trust. Therefore, audit quality enhances reliable and high-quality financial reporting (Gaynor et al., 2016; Tarmidi et al., 2021). Hence, audit services raise the reliability of the financial reportage. Thus, earlier studies link the agency call for audit quality to some surrogates, such as the size of the client and audit fees (Bala et al., 2018; DeFond, 1992).

According to the agency paradigm, outside auditors align the interests of shareholders with managers to decrease the conflict of interest and any possibility regarding potential opportunistic behaviours by managers (Jensen & Meckling, 1976). This is because shareholders select auditors to supply information essential to completing a contract with managers (Tarmidi et al., 2021; Watts & Zimmerman, 1983). As a result, reviewing financial reports is possibly a way to cut agency costs because external auditors have a lessened tendency to smooth out income (Adi, 2000).

According to resource dependence theory, the ACAE's role is essential to the governance instruments that helps a company achieve its predetermined goals (Pfeffer, 1972; Cohen et al., 2007). These goals could be achieved by giving appropriate supervision, which is anticipated to lessen agency glitches. Previous studies have contended that an AC with a higher percentage of accounting expertise provides better oversight of the managers' discretionary actions (Agrawal and Bala et al., 2019, p. 2005; Badolato et al., 2014). According to proponents of the resource dependence perspective, ACAE are the most productive members of the AC because "best practices" support holding AC members accountable for duties that require a high level of accounting understanding (Badolato et al., 2014; DeFond et al., 2014). Hence, it is anticipated that having more AC accounting professionals on the AC will raise the likelihood that managers will be unable to smooth their income.

The following are some notable contributions that the study makes: First, to the best of our knowledge, this study is one of the first to investigate the moderating impact of ACAE on the relationship between AUFA and IS practices in Nigeria. This study proposes that the existence of ACAE enhances the monitoring role of external auditors on the IS behaviour of the emerging economy. Second, most previous research on earnings manipulation largely focuses on accrual earnings; this study provides an insight into earnings manipulation through an artificial smoothing index. This is because prior literature has regarded IS as a signal of lower earnings quality because it reveals another technique of artificial smoothness (Dechow et al., 2010). Third, regulators, policymakers, and investors can benefit from the study's findings in formulating policies or decisions about corporate financial reporting issues.

Results from the study showed that audit fees (AUF) are likely to decrease IS. The study also found that Big 4 auditors and audit tenure (AUT) might not reduce the likelihood of IS. Interestingly, the study also found that Big 4 auditors and AUT had a significant negative relation with IS in firms with a higher proportion of ACAE. The study revealed that a higher proportion of ACAE overturned the positive effect of Big 4 auditors and AUT on IS.

Following is the paper's organisation: Section one introduces the study, and section two focuses on the relevant literature and hypothesis development. The method is discussed in part three. While section four explains the findings, and section five is the conclusion.

2. Literature and hypotheses

2.1. Income smoothing assumption

Previous studies have viewed income smoothing (IS) as either deceptive or informative. The proponents of an informative perspective view IS as an acceptable act because of its objective of maximising the benefits of the stockholders (Faraji et al., 2021; Ismail & Kamarudin, 2018). They argued that smoothness might function as a useful tool for management to maximise the benefits to investors, including lowering total corporation tax, preventing breaches of debt covenants, and lowering agency costs (Habib, 2005; Ismail & Kamarudin, 2018). According to proponents of the deceitful approach, IS is less informational and hence misleading. They link IS to management opportunism to obtain personal benefits (M. L. DeFond & Park, 1997). Consequently, managers are more likely to smooth income not by providing information but simply using it as an illusory device to customise accounting information for their purposes (Amat & Gowthorpe, 2004).

This supports the notion of intentionally smoothed income that arises from artificial smoothing procedures (Eckel, 1981). Therefore, IS is viewed as unethical under the accounting principle, irrespective of the motivating factor for managers to practice it. According to the investor hypothesis that Breton and Taffler (1995) proposed, individual stakeholders may find it challenging or impossible to understand the cause and effect of income manipulation due to a lack of personal experience, disinterest, or reluctance to participate in in-depth investigations.

However, the agency theory endorses that external auditors align shareholders' interests with managers to decrease the conflict of interest and any possibility of managers' potential for opportunistic behaviour (Jensen & Meckling, 1976). Past literature suggests that an audit is an autonomous guarantee of the reliability of financial reports, which increases the preservation of shareholders' interests and their trust. Thus, audit quality enhances the integrity of financial reporting quality (M. DeFond & Zhang, 2014; Tarmidi et al., 2021). Hence, audit services raise the reliability of the financial reports. Thus, earlier studies link the agency appeal for audit quality to some surrogates, such as the size of the client and audit fees (Bala et al., 2018; DeFond, 1992).

2.1.1. Audit firm size and income smoothing

Earlier studies have shown that Big 4 auditors are a reliable indicator of audit quality because bigger auditors are assumed to possess strong passion and better ability to carry out high-quality audits (M. DeFond & Zhang, 2014; DeAngelo, 1981). According to the body of literature, companies examined by Big 4 auditors reveal less IS than companies examined by non-Big 4 auditors (Zcan, 2019; Abdullah & Ku-Ismail, 2016; Khalil & Ozkan, 2016; Alves, 2014). The argument is that Big 4 auditors are more likely to reduce corporations' use of IS techniques. Zcan (2019), who looked at the effect of audit quality on IS in Turkey, has validated this. They worked with a sample of 97 companies from 2013 to 2018. Their research shows that Big 4 auditors are likelier to lessen earnings management. Alzoubi (2016) showed that companies who hire Big 4 auditors have much less discretionary accruals than companies that do not hire Big 4 auditors. Chen et al. (2006) investigated the influence of Big 4 auditors, industry specialisation, and earnings manipulation of Taiwanese companies. They found that the existence of Big 4 auditors is linked to less earnings manipulation in Taiwan. Contrarily, Knechel et al. (2018) looked at how widespread public trust and cooperation affected the audit fee versus Big 4 auditors. They selected a sampling of several nations throughout the world. They discovered that the Big 4 auditors are well-established in states with strong levels of civic collaboration. Almarayeh et al. (2020) have confirmed this. They explored the influence of audit quality on earnings manipulation in Jordan and found that Big 4 auditors had no significant influence in emerging economies and less regulated environments.

Furthermore, Le (2021) looked at the influence of auditors' tenure and auditor size on banks' ability to smooth out income in Vietnam. They demonstrated that the Big 4 auditors do not significantly lessen IS. These results could be because of the economic, cultural, and institutional contexts that vary from country to country. However, Zandi et al. (2019) examined Big 4 auditors and the quality of financial reporting, and they revealed that firms that hire Big 4 auditors have

less prevalence of earnings management. Jiang et al. (2019) considered the effect of Big 4 auditors on audit quality, and they found that accrual quality is high in firms that engage Big 4 auditors.

Eriabie and Dabor (2017) studied the influence of audit quality on earnings management. They used a sample of eighteen banks. The study discovered a negative link between discretionary and audit quality. Ndubuisi and Ezechukwu (2017), who investigated the factors influencing the audit quality of Nigerian banks, validated. Their study used a sample of 11 banks from 2010 to 2015. Their data demonstrated a correlation between Big 4 auditors and improved profit quality. Bala et al. (2018) recently studied Big 4 auditors and income manipulation in Nigeria. They discovered that Big 4 auditors in Nigeria are less likely to restrict discretionary accrual.

According to the justifications above, the following hypothesis is posited:

H_1 Big 4 auditor has a negative influence on IS.

2.1.2. Audit fees and income smoothing

Erstwhile literature has documented that the audit fee is a unique concept as it depicts audit efforts linked to a quality audit (Cho et al., 2021; M. DeFond & Zhang, 2014). It is a special surrogate representing the result of the supply and demand hypotheses. This is because, without a constant enhancement in audit quality, an auditor might not raise the audit price to cover extra work (Cohen et al., 2002). Prior literature has shown that a high audit fee is linked to lower IS (Cohen et al., 2007). Some studies have shown that managers' discretion to alter earnings figures was negatively correlated with audit fees (Bala et al., 2018; Franke et al., 2002). Carmona et al.'s (2015) study supported this. They discovered that the audit fee was inversely associated with abnormal accrual. In addition, Mitra et al. (2009) contended that audit price improves earnings quality by lowering the possibility of irregular accrual. Additionally, Abdul-Malik and Che-Ahmad (2016) confirmed that paying external auditors a high audit fee does not compromise their independence, but it supports the notion that greater audit prices correspond to bigger audit efforts, which produce higher quality earnings.

Recently, Chang et al. (2021) investigated the impact of IS on auditors' price decisions in nonregulated industries for U.S. businesses from 2000 to 2018. They discovered that IS has an inverse relationship with audit fees. According to Asthana et al. (2019), fee competitions are prized because they are essential for raising audit quality in the highly competitive US market for audit services. Moreover, Bala et al. (2019) examined 78 firms in Nigeria, revealing that firms that pay more for audit fees are associated with lower IS practices.

According to the arguments above, this study postulated that:

H_2 Audit fee has a negative influence on IS.

2.1.3. Auditor tenure and income smoothing

Over the years, audit practitioners and academics have debated the strengths and weaknesses of partner rotation. Some prior studies have claimed that auditors with long tenure might potentially develop stronger social and economic links with a firm and its managers. Longer engagement of auditors increases the likelihood that they may become friends with the management and, as a result, become less attentive to accounting hitches, which might damage their independence (Adeniyi & Mieseigha, 2013; Ball et al., 2015; Kuang et al., 2020).

Contrary to the above arguments, many researchers have argued that auditors' abilities rise with longer tenure. This is because a mandatory alteration of a partner might unfavourably change the

auditing results due to the change of partners with a more specialised level of expertise for their clients over a long period of appointment (Wan Hussin et al., 2018; Carey & Simnett, 2006; Leung et al., 2017). Myers et al. (2003) supported this. They examined auditor tenure and quality of earnings. They revealed that longer auditor tenancy is related to lower levels of discretionary accrual. In addition, Vasilakopoulos et al. (2021) looked at the effects that certain audit quality factors have on the IS behaviour of European Union Banks. They found that the length of an audit impacted IS. Le (2021) looked at the effects of auditor tenure and size on banks' ability to smooth income in Vietnam. They found that IS decreased with longer auditor tenure. Buntara and Adhariani (2019) examined audit tenure and earnings quality. They revealed that audit tenure is related to discretionary accrual. This result confirmed the findings of Okolie (2014), who studied the effect of auditor independence, audit tenure, and earnings management. They showed that auditor tenure reduces the level of discretionary accrual among companies in Nigeria.

According to the arguments above, this study postulated that:

H_3 Audit tenure has a negative influence on IS.

2.1.4. Audit quality, AC accounting expertise, and income smoothing

It has been documented that high-quality audit is connected with lower income manipulation and greater quality of financial reports (Bala et al., 2019, p. 2014; Eriabie & Dabor, 2017). Companies with better auditors are more likely to have less IS. Prior studies have used several surrogates in measuring audit quality and have documented mixed results about their association with earnings quality (Adeniyi & Mieseigha, 2013; Almarayeh et al., 2020; Bala et al., 2018; Ball et al., 2015; Kuang et al., 2020). In certain ways, some of these studies have shown that audit client size and auditor tenancy are linked to lower IS (Abdullah & Ku-Ismail, 2016; Alves, 2014; Carey & Simnett, 2006; Khalil & Ozkan, 2016; Wan Hussin et al., 2018; Leung et al., 2017; Özcan, 2019). On the other hand, Adeniyi and Mieseigha (2013), Bala et al. (2018), (Ball et al., 2015) and Kuang et al. (2020) have shown that audit firm size and audit tenure are related to higher IS. These mixed results make the direction of the connection between IS and audit quality misleading and thus call for further investigation.

Prior studies have suggested using a moderator variable when findings are inconsistent between the explanatory variable and the explained variable (Baron & Kenny, 1986; Wu & Zumbo, 2008). This study adopted ACAE as a moderator on the connection between IS and audit quality. AC members with accounting knowledge may evaluate how accounting principles are applied generally in light of accruals, revenue, and accounting estimates (Sarbanes Oxley Act, 2002). They are expected to possess knowledge of the basics of audit procedures and have experience in preparing audits and evaluating financial reports to show the breadth and complexity of accounting concerns (Trautman, 2013). The Financial Reporting Council of Nigeria (FRCN) Code of Corporate Governance (2018) stipulates that all audit committee members should have financial literacy, and at least a committee member must have financial expertise, have contemporary expertise in accounting and be able to interpret financial statements.

Resource dependence theory suggests that the role of the ACAE is a crucial component of the governance tools that assists a company in accomplishing its strategic goals (Pfeffer, 1972; Cohen et al., 2007). These goals could be accomplished by creating appropriate supervision that lessens agency problems. Previous studies have contended that a high percentage of directors with accounting knowledge in the AC allows for better oversight of managers' optional spending (Bala et al., 2019). Advocates of the resource dependence perspective have claimed that AC accounting professionals are the most effective members of AC, given that "best practices" endorse that members of AC may be responsible for duties requiring a high level of accounting understanding (Badolato et al., 2014). As a result, it is anticipated that having more AC accounting professionals on the AC would raise the likelihood that managers would not be able to smooth their income.

According to the arguments above, the study proposed that:

H_4 Large share of accounting expertise in the AC moderates the link between audit quality and IS.

3. Methodology

The initial population was 169 firms, of which 59 financial firms were excluded due to the uniqueness of their regulations. Another 22 firms did not possess ample information. Accordingly, 616 firm-year observations were included in the final sample. The study used information from the firm's annual reports and Thompson Reuters DataStream. The study adopted an ex post facto approach using a logistics regression estimate. A logistics regression estimation has been employed because the outcome variable is categorical (1 and 0).

3.1. Variable measurements

3.1.1. Dependant variable

Following Eckel (1981), Yang et al. (2012), and Bala et al. (2020), this study employed income variation's change in coefficient divided by sales variation's change in coefficient as a proxy for IS.

3.1.2. Independent, moderating and control variables

Following the procedure used by Waheed et al. (2021), Mbir et al. (2020), Widyaningsih et al. (2019), and Bala et al. (2018); (2019), The Big 4 auditors (Big4), audit fee (AUF), and auditor tenure (AUT) have all been used in this study as stand-ins for the audit firm attributes. The financial experience of the AC serves as a moderating variable. Client size (CLSIZ), board autonomy (BI), firm age (AGE), and company growth (GROW) were used as control variables. Table 1 displays the information on the measurements of the explained variable and the explanatory variables.

3.2. Model description

The following models were used to examine the hypotheses of the study;

$$IS_{it} = \beta 0 + \beta 1BIG4_{it} + \beta 2AUF_{it} + \beta 3AUT_{it} + \beta 4ACAE_{it} + \beta 5AGE_{it} + \beta 6BI_{it} + \beta 7CLSIZ_{it} + \beta 8GROW_{it} + \varepsilon_{it} \quad (1)$$

$$IS_{it} = \beta 0 + \beta 1BIG4_{it} + \beta 2AUF_{it} + \beta 3AUT_{it} + \beta 4ACAE_{it} + \beta 5 + BIG4*ACAE_{it+} + \beta 6AUF*ACAE_{it} + \beta 7AUT*ACAE_{it} + \beta 8AGE_{it} + \beta 9BI_{it1} + \beta 10CLSIZ_{it} + \beta 11GROW_{it} + \varepsilon_{it}. \quad (2)$$

4. Results

4.1. Estimation tests

Table 2 depicts the augmented Dickey-Fuller (ADF) for stationary checks (Dickey & Fuller, 1988). The "unit root's null hypothesis" is used for a critical value versus the alternative of stationarity for ADF. The outcomes of the unit root estimation under individual intercept and trends for ADF, disclose that all variables of interest are integrated at levels, indicating that they are integrated of order zero. In addition, a link test has been piloted for examination of model fitness. The Hatsqs of the link test have shown that both the direct and moderation models are well fitted.

4.2. Summary statistics

The summary statistics for continuous variables are shown in Table 3. The audit fees ranged in cost from $2 million to $250 million, having an average of $34.11 million. Companies' AGE was on average 24 and half years. On average, 24% of AC members were accounting experts. While some companies had no personnel with accounting experience, other firms had about 45% of their AC members who were financial accounting experts. Moreover, on average, 71% of the directors in the sampled firms were autonomous directors. The average growth rates of the sampled firms were 33%.

Table 1. Variable measurements

Variable	Acronym	Definition
Dependent		
Income Smoothing	IS	"Alteration in the coefficient variation of profit is divided by the alteration in the coefficient variation of revenue". If a company's CVI/CVS ratio is more than 1, it is seen to have smoother income (Bala et al., 2019).
Independent		
Big 4 Auditors	BIG 4	Measured as 1 if the Big 4 auditors audited a company and 0 otherwise (Mbir et al., 2020).
Audit fees	AUF	Natural logarithms of audit fees (Bala et al., 2019).
Audit Tenure	AUT	If an audit partner has been hired by a client company for more than seven years, the score is 1; otherwise, it is 0. (Carey & Simnett, 2006; Widyaningsih et al., 2019).
Moderator		
AC accounting expertise.	ACAE	Number of AC members with experience in financial accounting as a percentage of all AC members (Bala et al., 2019).
Control		
Client-Size	CLSIZ	Natural logarithms of client total assets (Wan Hussin et al., 2018)
Board independence	BI	The ratio of autonomous directors on the board (Waheed et al., 2021).
Firm age	AGE	Calculated as the difference between the observation and listed years (Waheed et al., 2021).
Growth	GROW	Current sales are divided by change in sales (Bala et al., 2019)

Table 2. Tests of Pre-estimation

ADF Test			**Link test Direct Model**	**Link test Moderation Model**
Variable	**τ_μ**	**τ_T**	**Hatsq**	**Hatsq**
IS	−27.27***	−26.04***	0.46	0.44
Big 4	−5.74***	−5.49***		
AUF	−11.47**	−10.93***		
AUT	−8.75***	−7.82***		
ACAE	−2.72***	−2.53***		

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure, "ACAE for "AC Accounting Expertise," P values of ***p 0.01.

4.2.1. Summary statistics of dichotomous variables

Table 4 shows the summary statistics of dummy variables. Table 4 discloses that an aggregate of 54 firms (375 firm-year observations) were income smoothers, while the remaining 34 firms (241

Table 3. Summary statistics of continuous variables

Variable	Mean	Average	Min.	Max.	Std. Dev.
AUF	13077	34,101	2000	250,000	68,186
AGE	25.00	24.54	1.00	68.00	13.54
ACAE	0.19	0.24	0.00	0.45	0.22
BI	0.71	0.71	0.06	0.92	0.12
CLSIZ	16.27	16.62	12.24	116.90	4.39
GROW	0.00	0.33	−5.26	7.51	2.69

AUF = Audit fees, AGE = firm age, ACAE = AC accounting expertise, BI = board independence, CLSIZ = client size, GROW = firm growth.

firm-year observations) were nonsmoothing firms. This finding indicates that more than 62% of the examined firms were intricate in practices. Overall, Big 4 auditors audited 350 observations (57% of the sampled enterprises), while non-Big 4 auditors audited 266 observations (43% of the sampled firms). More than 56% of the sampled firms had their auditors for at least seven years and above, while the remaining 44% changed their auditors before seven years.

4.3. Correlations

Table 5 depicts the correlation matrix indicating the link between the study's variables. In essence, the correlation outcomes disclose that multicollinearity was not a threat to the estimation variables. The greatest connection among the predictors was 0.43% between AUF and BI. It has been argued that a correlation of less than 80% for estimation might not be problematic (Gujarati, 2004). Table 5 discloses that Big4 and AUT were positively associated with IS, and the positive coefficient might illustrate how the estimation model gives their actual relationship.

Regression, however, does a better job of describing these relationships because correlation does not imply causality. Table 5 also reveals that AUF 4 and moderator BI were negatively associated with the IS practice.

4.4. Regression analysis

4.4.1. Audit attributes income smoothing

This section tests hypotheses one to four (H11 to H14) of the study to investigate the effect of AUFA on IS practice. Table 6 depicts the estimation results of the impact of audit firm attributes on IS. It indicates that Big 4 auditors have positive relations with IS practice at the 5% significance level. This result suggests that Big 4 auditors are less likely to prevent IS practices performed by their client firms and corroborates the argument that non-Big 4 auditors could have better familiarity with domestic marketplaces and a better liaison with their clienteles. These motives might enable non-Big 4 auditors to better detect the wrongdoings in the firms (Bala et al., 2018; Louis, 2005). Previous studies have also documented significant positive relationships between the Big 4 auditors and earnings manipulation (Balaet al., 2018; Bruynseels & Cardinals, 2014; Ndubuisi & Ezechukwu, 2017; Ozili, 2017, 2017).

Table 6 also shows a negative link between AUF and IS. This result implies that a greater AUF decreases the probability of IS. This is consistent with the view that a high AUF intensifies audit efforts and augments earnings quality. Consistent with the agency perspective, examining financial reports is recognised as a strategy to cut agency costs because the external auditor effort lessens the tendency for IS (Adi, 2000; Bala et al., 2019).

The findings also demonstrate a substantial positive correlation between AUT and IS, indicating that extended term of auditors might decrease the possibility of IS in Nigeria. One explanation for

Table 4. Summary statistics of dichotomous variables

		Firms	Freq.		Per cent		Aggregate
Variable	**Obs.**	88	0	1	0	1	%
IS	616	88	241	375	39.12	60.88	100
BIG 4	616	88	266	350	43.18	56.82	100
AUT	616	88	345	271	56.01	43.99	100

Notes: IS = Profit smoothing index, BIG 4 = big 4 auditors, AUT = audit tenure.

Table 5. Correlation

Variable.	IS	BIG 4	AUF	AUT	AGE	ACAE	BI	CLSIZ	GROW
IS.	1.00								
BIG 4	0.09*	1.00							
AUF	−0.08	0.24***	1.00						
AUT	0.09*	−0.04	−0.07	1.00					
AGE	0.05	0.08	0.20***	−0.01	1.00				
ACAE	−0.05	0.07	0.04	−0.12**	0.03	100			
BI	0.13**	0.22***	0.43***	−0.03	0.14***	0.17***	100		
CLSIZ	0.01	0.023	0.23***	0.02	0.11**	−0.03	0.20***	100	
GROW	0.09*	−0.04	−0.06	0.02	−0.10**	0.02	−0.13**	−0.08*	100

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure," AGE of the firm, ACAE for "AC Accounting Expertise," BI for "Board Independence," CLSIZ for "Client Size," and GROW for "Growth." P values of ***p 0.01, **p 0.05, and *p 0.1.

Table 6. Robust Logistic Regression of the relationship between AUFA and IS (Direct model)

Variable	Dy/Dx	Delta-method Std. Err.	Z-Val.	P-Val.
BIG 4	0.09	0.04	2.39**	0.02
AUF	−0.08	0.02	−4.41***	0.00
AUT	0.07	0.04	1.90**	0.06
AGE	0.00	0.00	1.60	0.11
ACAE	−0.33	0.16	−2.06**	0.04
Big 4* ACAE	−0.53	0.26	−2.05**	0.04
AUF* ACAE	−0.10	0.04	−2.26**	0.02
AUT* ACAE	−0.48	0.20	−2.44**	0.02
BI	0.62	0.13	4.94***	0.00
CLSIZ	0.00	0.00	0.49	0.62
GROW	0.02	0.01	2.90***	0.00
Pseud. R^2		0.06		
x^2		47.93		
Prob.		0.00		
Estimation Test: Link test (Hatsq)		0.46		
Gof Test Probability x^2		0.54		
Correct classification		64.77%		

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure," AGE of the firm, ACAE for "AC Accounting Expertise," BI for "Board Independence," CLSIZ for "Client Size," and GROW for "Growth." P values of ***p 0.01 and **p 0.05.

Table 7. Pooled logit estimation of the link between AUFA and IS in high and low ACAE firms

High ACAE firms					**Low ACAE firms**				
Variable	**(coeff.)**	**(Std. Errs.)**	**t-val.**	**p-val.**		**(coeff.)**	**(Std. Errr.)**	**t-val.**	**p-val.**
BIG 4	−2.59	1.17	−2.21**	0.03		0.29	0.19	1.57	0.12
AUF	−0.99	0.44	−2.24**	0.03		−0.27	0.10	2.86***	0.01
AUT	−1.75	0.84	−2.08**	0.04		0.21	0.19	1.16	0.25
AGE	0.02	0.03	0.76	0.45		0.01	0.01	1.37	0.17
ACAE	−5.30	2.82	−1.88*	0.06		−1.26	0.79	−1.60	0.11
BI	5.16	3.03	1.71*	0.09		2.52	0.64	3.94***	0.00
CLSIZ	−0.61	0.24	−2.51***	0.01		0.01	0.02	0.59	0.56
GROW	0.03	0.12	0.23	0.82		0.12	0.04	3.18***	0.00
Cons	18.40	4.83	3.81***	0.00		2.07	0.99	2.08**	0.04
Pseud. R^2	0.38					0.06			
x^2	21.76					29.74			
Prob.	0.01					0.03			
Estimation Test: Link test (Hatsq)	0.68					0.62			
Gof Test Probability x^2	4.67 0.93					8.33 0.22			
Correct classification	71.08					63.82			
Observation	398					218			

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure," AGE of the firm, ACAE for "AC Accounting Expertise," BI for "Board Independence," CLSIZ for "Client Size," and GROW for "Growth." P values of ***p 0.01, **p 0.05, and *p 0.1.

the outcome might be the term of external auditors, as proposed by the "Security and Exchange Commission (SEC) Code of CG 2011," which demands that outside auditors can be employed by their client businesses for repeated periods, with a ten-year maximum. This can be seen as being excessively long because extremely long tenures for external auditors could undermine their independence because the longer they work for the same company as auditors, the more likely it is that they will develop relationships with the management and, as a result, become less critical of financial matters. Similar findings from earlier investigations have supported this (Adeniyi and Mieseigha, 2013; Ball et al., 2015; Kuang et al., 2020).

Table 6 also reveals that ACAE was inversely related to IS. Thus, it implies that an AC with more members with financial accounting skills is more likely to decrease IS practices. This finding is in line with the study of Bala et al. (2019). Ghafran and Yasmin (2018) discovered an inverse link between the AC accounting knowledge and discretionary accrual and IS.

AUFA and IS for firms with higher AC accounting expertise and lower AC accounting expertise. This section compares the influence of AUFA on IS between the subsamples with higher AC accounting expertise (1) and lower AC accounting expertise (0). This was done to determine whether efficient variations exist within the two samples. The results from Table 7 reveal that Big 4 auditors, AUF and AUT had a significant inverse link with IS in firms with a higher proportion of AC accounting expertise. However, Table 7 shows that AUF has an inverse relationship with IS in companies with a lower proportion of AC accounting expertise. This implies that the audit attributes of companies with a greater proportion of AC accounting expertise were more likely to decrease IS than the audit attributes of companies with a lower proportion of AC accounting expertise.

Table 8. Robust logit estimation of the link between AUFA and IS "moderation model"

Variable	Dy/Dx	Delta-method Std. Err.	Z-Val.	P- Val.
BIG 4	0.45	0.18	2.47***	0.01
AUF	−0.01	0.04	−0.37	0.71
AUT	0.39	0.14	2.81***	0.01
Big 4* ACAE	−0.53	0.26	−2.05**	0.04
AUF* ACAE	−0.10	0.04	−2.26**	0.02
AUT* ACAE	−0.48	0.20	−2.44**	0.02
AGE	0.00	0.00	1.68*	0.09
ACAE	1.11	0.49	2.26**	0.02
BI	0.56	0.13	4.34***	0.00
CLSIZ	0.00	0.00	0.24	0.81
GROW	0.02	0.01	2.87***	0.00
Pseud. R^2		0.08		
x^2		57.91		
Prob.		0.00		
Estimation Test: Link test (Hatsq)		0.44		
Gof Test Probability x^2		0.32		
Correct classification		65.91%		

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure," AGE of the firm, ACAE for "AC Accounting Expertise," BI for "Board Independence," CLSIZ for "Client Size," and GROW for "Growth." P values of ***p 0.01 and **p 0.05".

Table 9. Complementary measurements of outcome variables "direct model"

Variable	Dy/Dx	Delta-method. Std. Errs.	Z-Val.	P- Val.
BIG 4	0.02	0.04	0.60	0.55
AUF	−0.06	0.02	−2.89***	0.00
AUT	0.03	0.04	0.88	0.38
AGE	0.00	0.00	2.29**	0.02
ACAE	−0.08	0.16	−0.51	0.61
BI	0.62	0.13	4.84***	0.00
CLSIZ	0.00	0.00	0.13	0.89
GROW	0.03	0.01	3.54***	0.00
Pseud. R^2		0.06		
x^2		48.01		
Prob.		0.00		
Estimation Test: Link test (Hatsq)		0.93		
Gof Test Probability x^2		0.80		
Correct classification		63.80%		

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure," AGE of the firm, ACAE for "AC Accounting Expertise," BI for "Board Independence," CLSIZ for "Client Size," and GROW for "Growth." P values of ***p 0.01 and **p 0.05.

4.4.2. Effect of AC accounting expertise on the link between AUFA and IS

Table 8 presents the regression outcomes for the moderating role of AC accounting expertise on the relationship between AUFA and IS. It shows that the interaction between Big 4 and ACAE (Big 4*ACAE), AUF and ACAE (AUF*ACAE), and AUT and ACAE (AUF*ACAE) were inversely linked to IS. This finding infers that except for AUF, Big 4 and AUT are only active in decreasing the likelihood of practice when a firm may have a higher proportion of AC accounting expertise (ACAE). This supports the notion that ACAE has a general understanding of audit functions, preparing audits, and evaluating financial reports that show the breadth and complexity of accounting issues (Trautman, 2013). It further supports the agency theory that providing adequate oversight reduces agency problems.

4.5. Sensitivity analysis

This study carried out sensitivity tests to account for firm-specific features, endogeneity, and the choice of the outcome variable. The results of the sensitivity checks employed are shown in this section.

4.5.1. Complementary measure of outcome variables

This section explains the supplemental measure of outcome (IS). The study used Eckel's (1981) model to represent IS. In the main model, earnings smoothing was calculated as a deviation in the coefficient variation of income to net earnings. Following Bala et al. (2019) and Ashari et al. (1994), operational profits were adopted as a substitute IS measure. Tables 9 indicate that the coefficients and signs of the direct and moderated models are akin to those of sensitivity checks. Thus, the outcomes of the IS model are not sensitive to supplementary measures for the outcome variable.Table 10

4.5.2. Control for the issue of endogeneity

This section explains the "generalised methods of moment (GMM)" model as a control for probable endogeneity among the variables. Endogeneity is a communal issue ascribed to auditing or accounting research (Larcker & Rusticus, 2010). It has been opined that the relationship between inside governance devices and outside auditing can be endogenous because the power of inside governance instruments may lead to low or high requests for broad outside auditing. Consequently, we reestimated the main

Table 10. Complementary measurements of outcome variables "moderation model"

Variable	Dy/Dx	Delta-method Std. Errs.	Z-Val.	P- Val.
BIG 4	0.18	0.16	1.15	0.25
AUF	−0.02	0.03	−0.72	0.47
AUT	0.31	0.14	2.27**	0.02
Big 4* ACAE	−0.23	0.22	−1.07	0.29
AUF* ACAE	−0.05	0.03	−2.09**	0.04
AUT* ACAE	−0.41	0.19	−2.13**	0.03
AGE	0.00	0.00	2.40**	0.02
ACAE	−0.77	0.33	−2.31**	0.02
BI	0.57	0.13	4.43***	0.00
CLSIZ	0.00	0.00	−0.01	0.99
GROW	0.03	0.01	3.52***	0.00
Pseud. R^2		0.06		
x^2		57.91		
Prob.		0.00		
Estimation Test: Link test (Hatsq)		0.56		
Gof Test Probability x^2		0.28		
Correct classification		65.58%		

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure," AGE of the firm, ACAE for "AC Accounting Expertise," BI for "Board Independence," CLSIZ for "Client Size," and GROW for "Growth." P values of ***p 0.01 and **p 0.05.

Table 11. IS model: "Dynamic panel data estimation GMM"

Variable	Coeff.	Std. Errs.	Z-Val.	P-Val.
IS				
L1.	−0.35	0.05	−7.02***	0.00
BIG 4	0.14	0.07	1.92*	0.06
AUF	−0.12	0.04	−3.36***	0.00
AUT	0.08	0.13	0.66	0.51
AGE	0.01	0.01	2.27**	0.03
ACAE	−0.85	0.57	−1.49	0.14
BI	0.54	0.25	2.19**	0.03
CLSIZ	0.02	0.03	0.73	0.47
GROW	0.02	0.01	1.39	0.17
CONS	1.56	0.44	3.53***	0.00
Wald x^2	371.71			
Probability.	0.00			
AR I: Probability.	0.00			
AR II: Probability.	0.575			
Sargan test: Probability.	0.08			
Hansen test: Probability.	0.54			

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure," AGE of the firm, ACAE for "AC Accounting Expertise," BI for "Board Independence," CLSIZ for "Client Size," and GROW for "Growth." P values of ***p 0.01 and **p 0.05.

Table 12. IS model: "Dynamic panel data estimation GMM"

Variable	Coeff.	Std. Err.	Z-Val.	P-Val.
IS				
L1.	−0.20	0.07	−3.03***	0.00
BIG 4	0.67	0.69	0.97	0.34
AUF	−0.03	0.06	−0.50	0.62
AUT	0.89	0.46	1.96**	0.05
Big 4* ACAE	−0.80	0.08	−1.76*	0.08
AUF* ACAE	−0.14	0.05	−2.58***	0.01
AUT* ACAE	−1.31	0.62	−2.12***	0.04
AGE	0.01	0.01	1.75*	0.08
ACAE	−1.45	1.26	−1.15	0.25
BI	0.35	0.28	1.27	0.21
CLSIZ	0.00	0.01	0.33	0.74
GROW	0.02	0.01	1.65*	0.10
CONS	0.30	0.90	0.33	0.74
Probability.	392.71			
AR I: Probability.	0.00			
AR II: Probability.	0.00			
Sargan test: Probability.	0.575			
Hansen test: Probability.	0.11			
Probability.	0.96			

Notes: IS stands for the "income Smoothing Index," BIG 4 for "Big 4 auditors," AUF for "Audit Fees," AUT for "Audit Tenure," AGE of the firm, ACAE for "AC Accounting Expertise," BI for "Board Independence," CLSIZ for "Client Size," and GROW for "Growth." P values of ***p 0.01, **p 0.05, and *p 0.1.

model by adopting the GMM model to cater to the endogeneity or inverse causality issue. Prior studies have adopted a similar method, following Bala et al. (2019) and Sani et al. (2020).

Tables 11 show the GMM model for the sensitivity check. The coefficients and signs of the direct and moderated models are similar to those of sensitivity checks. Generally, the Sargan test probability values, AR 2 probability values, and Hansen test probability values are not significant; therefore, it is established that the results are not sensitive to the endogeneity issues.Table 12

5. Conclusion

This paper investigated the influence of AUFA on the IS and how the ACAE moderates their association. Results from the study reveal that AUF has a high likelihood of decreasing IS. The study also shows that Big 4 auditors and AUT may not decrease the likelihood of IS. Interestingly, Big 4 auditors and AUT were inversely related to IS in firms with a higher proportion of AC accounting expertise. The study concludes that a higher proportion of ACAE overturned the positive effect of Big 4 auditors and AUT on IS. This study suggests that the Nigerian SEC can increase the number of financial experts in the AC when reviewing subsequent codes because they have been shown to monitor the practice of IS effectively. Regulators, policymakers and investors can benefit from the study's findings in formulating policies or decisions about corporate financial reporting issues. The study is limited to nonfinancial service firms. Thus, the findings obtained in this study cannot be generalised. Future research might thus examine the effect of AUFA on IS and how the ACAE modifies their association.

Funding
The authors received no direct funding for this research.

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Disclosure statement
No potential conflict of interest was reported by the author(s).

Citation information
Cite this article as: Audit firm attributes and income smoothing: the moderating influence of audit committee accounting expertise, Hussaini Bala, Waqar Ahmad, Ghousia Khatoon & Abubakar Balarabe Karaye, *Cogent Business & Management* (2022), 9: 2127194.

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