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Ownership structure and audit fees: Evidence from Sub-Saharan Africa

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C H R O N I C L E

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A B S T R A C T

This study examines the factors affecting audit fees in firms listed primarily in Sub-Saharan Africa countries by focusing on the relationship between ownership structure and audit fees. The study uses an unbalanced panel dataset of 531 observations of non-financial firms collected from annual reports for the years 2005 to 2009. The findings show that audit fees vary with ownership structure. Particularly, the study shows managerial ownership and concentrated ownership are negatively related to audit fees, whereas foreign ownership is related positively to audit fees. This study provides valuable insights on effects of ownership structure on audit fees pricing. Specifically, the study emphasizes that decisions of pricing of audit fees should consider characteristics of the ownership structure of a firm. The study makes contributions to the literature that focuses on the nexus between corporate governance and audit fees. Particularly, the findings provide empirical evidence of impacts of ownership structure on audit fees in Sub-Saharan African context, which is characterized by less developed financial markets and a weak institutional environment relative to developed countries where most studies are conducted.

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1. Introduction

Financial reporting frameworks and good corporate governance practices require firms to be transparent by presenting and disclosing true and fair financial information to stakeholders. Firms' stakeholders include inside and outside stakeholders. Inside stakeholders such as managers and controlling shareholders, usually have more access to internal information than outside stakeholders. This creates information asymmetry, which is one of the sources of the agency costs. In addition, due to self-interest and moral hazard, insiders may be unwilling to provide adequate financial reporting to all stakeholders. This raises concern about the reliability of financial information presented and disclosed by insiders. Therefore, to address this problem, it is recommended to establish good corporate governance mechanisms which shall ensure information given by firms presents and discloses a true and fair view of the firm's affairs (Tinaikar, 2017).

Corporate governance are mechanisms for directing and controlling firms to ensure the interest of stakeholders are enhanced and protected. These mechanisms are normally categorized into external and internal governance mechanisms (Connelly et al., 2010; Walsh & Seward, 1990). The internal governance mechanisms comprise those governance practices established and operated within the firm. These mechanisms include ownership structure, corporate boards, internal controls, and other internal governance mechanisms established inside the firm (Connelly et al., 2010). On the other hand, external governance mechanisms include governance measures and practices found in the external environment. These mechanisms include laws, rules, market for product, service, and labor, financial and capital market (Connelly et al., 2010).

The internal and external governance mechanisms work as either complement or substitute to each other (Barroso et al., 2018; Jensen & Meckling, 1976) to ensure the firm is properly directed and controlled. In this regard, understanding the

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connection between different types of external and internal mechanisms and how they interact to monitor and control agency problems is one of the interesting subjects both in academia and practice. This paper, therefore, studies the association between ownership structure, which is among important internal governance mechanisms and audit fees charged by external auditors for providing auditing services as required by law.

Based on agency theory perspective, ownership structure and auditing can be conceptualized as two different corporate governance mechanisms which may work either as a substitute or complement of each other. External auditors as a part of monitoring mechanisms represent shareholders by examining and auditing affairs of firms which shareholders delegate to management (Nelson & Mohamed-Rusdi, 2015). Accordingly, Nelson and Mohamed-Rusdi (2015) suggest that the shareholders depend on the auditors as one of mechanisms of monitoring agency problems. Furthermore, Chow (1982) argues that the main objective to engaging auditors is to decrease conflicts of interests between firms' managers and shareholders. Therefore, one of primary reasons for appointment of external auditors is because shareholders want to reduce agency costs (Hall et al., 2020). This implies that the level of agency costs influences the level of quality of auditing services required by shareholders and subsequent amount of fees paid to auditors. This is because agency problems influence internal controls, which in turn affect audit risk, scope of audit procedures to be carried out to minimize assessed audit risk and audit fees, which are established based on planned audit procedures and assessed audit risk.

According to IFAC (2014a), the objective of auditing is to enhance the confidence of users of financial statements on reliability of financial statements. Additionally, IFAC (2014a) indicates that this objective is attained by expression of audit opinion on the financial statements whether they have been prepared according to the required financial reporting framework. Accordingly, a statutory audit is done according to law and regulation which require all public listed firms to be audited by professional accountants by using appropriate audit procedures as specified by auditing standards. In conducting audits, external auditors are required to follow those standards to obtain sufficient and appropriate audit evidence to allow auditors to express opinion on truth and fairness of financial statements (IFAC, 2014b). In this regard, auditing aims to mitigate agency problems by maintaining financial reporting quality, decreasing information asymmetry and enhancing fair treatment of all shareholders of the firm (Barroso et al., 2018) by ensuring financial statements present a true and fair view of affairs of the firm.

Generally, the extent and nature of audit procedures carried by auditors depends among other factors on assessed risk of presence of material misstatement in financial statements. In other words, one of key determinants of the extent and nature of audit procedures is assessed material misstatement. The assessed material misstatement is considered positively related to audit risk. According to IFAC (2014a), audit risk happens when the auditor provides incorrect opinion when there is material misstatement in financial statements. Audit risk is regarded as a product of detection risk and material misstatement, whereas material misstatement is regarded as a function of inherent risk and control risk. Control risk which influences material misstatement and eventually the audit risk is negatively related to internal controls. This implies that firms with strong internal controls are expected to have low levels of control risk. However, internal controls are affected by specific characteristics of the firm, including internal governance mechanisms such as ownership structure. Specifically, it is argued that ownership structure affects the quality of the control environment, which in turn has an impact on audit risk, scope of audit procedures and subsequently on fees paid to auditors.

The extant literature suggests ownership structure affects audit fees (Adelopo et al., 2012; Nelson & Mohamed-Rusdi, 2015). However, these effects depend on the number of shares owned by different types of shareholders. This is because the different types of ownership structures are associated with various governance mechanisms which are used by shareholders to monitor agency risks, including risk of material misstatement of financial statements (Nelson & Mohamed-Rusdi, 2015). In this regard, the degree of reliance on internal governance by external auditors varies with types of ownership structure. As a result, ownership structure affects the scope of audit procedures carried out by external auditors to obtain the required audit evidence, which in turn affect audit fees.

Foregone discussion explains the general relationship between ownership structure and audit fees. However, Liang et al. (2020) argue that many studies on audit fees focus on firms' characteristics and auditors with little attention on ownership structure though ownership structure can influence many aspects of firms. Accordingly, this study addresses the concern raised by Liang et al. (2020) by examining the influence of ownership structure on audit fees. Furthermore, most studies examining factors affecting audit fees are based in the developed countries (Lobanova et al., 2020; Shan et al., 2019; Widmann et al., 2020) that have relatively advanced good governance practices and institutional environments. However, Waweru, (2020) argues that because of prevailing differences in institutional environments between developed and developing countries, findings of studies in the developed countries might not capture the situation in developing countries. Therefore, there is a call to conduct more studies in different contexts, especially in developing countries that are characterized by weak institutional environments. By extending this research stream in different contexts it would help to expand understanding of antecedents and consequences of corporate governance around the world. In this regard, this paper extends this stream of research to developing countries in Sub- Saharan Africa(SSA).

Many countries in SSA are considered to have a relatively weak institutional environment (Kaufmann et al., 2011) and a less developed financial market. The existence of a weak institutional environment and less developed financial market in SSA has implications on types of governance mechanisms most appropriate in SSA and the ways those mechanisms interact to control agency problems. Firms operating in a weak institutional environment are expected to depend more on internal governance as a mechanism for monitoring agency problems. This is because in a weak institutional environment, the external governance mechanisms are not effective to control agency problems and therefore not reliable in this situation. Accordingly, Munisi et al. (2014) argue that because of the weakness of the institutional environment, ownership structure, as among important internal governance mechanisms, can be one of key governance mechanisms of firms in SSA that may influence control of agency problems. This implies that ownership structure can affect a firm's decisions with regard to use of other governance mechanisms to monitor agency problems and related costs.

According to Munisi (2020), ownership of firms in SSA is characterized by concentrated, foreign, government and managerial types of ownership. Given the situation of weak external governance mechanisms in SSA which is attributed to the weak institutional environment and importance of ownership structure as one of key internal governance mechanisms, these ownership structures are likely to influence the degree of agency problems in firms and other governance mechanisms used by firms to monitor agency problems. In this regard, SSA is an interesting context to study effects of ownership structure on audit fees. Therefore, this paper examines the association between ownership structure and audit fees in SSA countries.

The findings show that managerial and concentrated ownerships are related to low audit fees while foreign ownership is related to high fees. The findings of negative association between managerial ownership and audit fees is explained by incentive-alignment perspective. This perspective suggests that a high stake of managerial ownership will motivate managers to enhance firm value instead of pursuing personal interests. As a result, this leads to overall low risk and low audit fees. Moreover, the negative relationship between concentrated ownership and audit fees is explained by the monitoring perspective whereby monitoring activities undertaken by large shareholders help to reduce audit risk associated with agency problems. This leads to low demand for high quality audit services and hence low audit fees in firms with high concentrated ownership. On the other hand, one plausible explanation of the results of the positive relationship between foreign ownership and audit fees is spillover effects of corporate governance practices around the world. According to the spillover effects view, foreign investors are expected to prefer high quality auditing services similar to those offered in their countries of origin. Furthermore, these findings are explained by foreign investors' preference for high-quality audit services as one of methods to address the problem associated with uncertainty and information asymmetry commonly found in a weak institutional environment like SSA countries. However, high quality auditing services carry a premium charge which leads to high audit fees in firms with a high proportion of foreign ownership.

This study contributes to the literature on corporate governance and auditing services fees. Particularly, the study enhances our knowledge on effects of ownership structure on demand of audit services and more specifically on influence of ownership structure on audit fees. On the one hand, auditing service is considered as one of the governance mechanisms used by firms to deal with risks associated with agency problems. On the other hand, a firm's ownership structure is one of internal governance mechanisms which acts as monitoring and incentive mechanism to reduce agency costs. The existence and interaction of different governance mechanisms affect the choice and degree of application of these mechanisms in monitoring agency problems. These governance mechanisms work as substitutes or/and complements to each other. This has implications on utilization of different governance mechanisms to control agency problems. In this regard, this study argues that quality of auditing services required by different firms varies with types of ownership structure, which suggests that ownership structure is expected to affect audit fees. Secondly, the study makes a contribution to the research stream which focuses on monitoring and incentive mechanisms associated with different types of ownership structures and their effects on audit fees. Lastly, the study contributes to the auditing and corporate governance literature in developing countries, particularly SSA countries. These countries are characterized by a weak institutional environment that affects the degree of application of different good governance practices, such as high quality audit services, to ensure reliability of financial reporting.

2. Literature review and development of hypotheses

2.1 Managerial Ownership

Separation of ownership and control of firms creates a relationship between principal and agent of firms which leads to agency problems (Jensen and Meckling, 1976). Agency problems when not well controlled can have adverse effects on firm performance. Therefore, principals need to control agency problems by establishing monitoring and incentive mechanisms. These mechanisms operate either as complement or substitute (Gul et al., 2002) to control agency problems. One of the incentive mechanisms used by principals to reduce agency problems is to provide agents with ownership of shares in the firms, hereby known as managerial ownership. Managerial ownership reduces agency problems by aligning interests of agents with those of principals (Jensen & Meckling, 1976). In addition to managerial ownership incentives, principals may use various monitoring mechanisms to control agency problems. One of these monitoring mechanisms is auditing services

provided by external auditors. In this regard, shareholders appoint external auditors to audit financial statements and provide reasonable assurance whether those statements are true and fair (IFAC, 2014a).

Generally, law and regulation governing the listed public firms require these firms' financial statements to be audited by authorized qualified professional accountants. In addition, the auditing standards require the professional accountants to carry out appropriate audit procedures to assist them to obtain sufficient and appropriate audit evidence before they can give audit opinion (IFAC, 2014a). The scope of work carried out by auditors to obtain sufficient and appropriate audit procedures is influenced by the strength of firms' internal control environment (Liang et al., 2020). However, the internal control environment is affected by incentive and monitoring mechanisms utilized by firms to control agency problems. In this regard, incentive and monitoring mechanisms influence overall audit risks and therefore audit procedures and eventually audit fees.

As indicated above managerial ownership is one of the incentives which aligns shareholders and manager's interests and helps to reduce agency conflicts and related costs (Jensen & Meckling, 1976; Shan et al., 2019). This is based on the argument that ownership of shares in a firm motivates managers to work towards a common objective of enhancing firms value because they expect to receive more rewards when firm performance is high (Nelson & Mohamed-Rusdi, 2015). Therefore, in this situation the incentive mechanisms work as a substitute for monitoring mechanisms. Accordingly, managerial ownership induces managers to produce relevant and reliable information (Gul et al., 2003; Gul et al., 2002; Mitra et al., 2007) that provide a true and fair view of affairs of a firm. When managers provide reliable and relevant information they minimize risk of material misstatement and audit risk which leads to reduction of audit fees (Mitra et al., 2007).

In the firm in which managerial ownership is an effective incentive mechanism, shareholders reduce the degree of using monitoring mechanisms to control agency problems. This means that when managerial ownership is high, shareholders reduce use of monitoring mechanisms such as high quality audit services to control agency problems (Nikkinen & Sahlström, 2004). This is because high managerial ownership reduces managers' opportunistic behavior and therefore the possibility to manipulate financial information (Lobanova et al., 2020). This minimizes risk of financial misstatements which reduces audit risk. As a result, this decreases the need for detailed substantive audit procedure which reduces audit fees (Lobanova et al., 2020). In this regard, it is argued that high managerial ownership is associated with low audit fees (Lobanova et al., 2020). The hypothesis is suggested as follows.

H_1: *Managerial Ownership is negatively related to audit fees.*

2.2 Concentrated Ownership

Relationship between concentrated ownership and audit fees is founded on the extent of internal monitoring performed by large and controlling shareholders in the firms. Concentrated ownership is regarded as one of important internal governance mechanisms for monitoring agency problems (Shleifer &Vishny, 1986; Shleifer &Vishny, 1997). The large and controlling shareholders who are associated with concentrated ownership, are closely involved in the firm's affairs. The incentive of these shareholders to be closely involved in the affairs of a firm is influenced by the number of shares they own in the firm which determines the residual benefits they can obtain from the firm. Therefore, shareholders with significant ownership have more incentive to engage in close monitoring of firms as benefits expected by them are likely to outweigh the monitoring costs (Shleifer &Vishny, 1986). In contrast, shareholders who own a few shares have little incentive to be closely involved in the affairs of the firms because involvement costs are expected to be higher than benefits. Accordingly, Shleifer and Vishny (1986) suggest that minority shareholders do not have adequate stake in the firm to accept the opportunity costs resulting from maintaining close monitoring of management of the firm. Therefore, it is argued that when the firm is widely held, individual shareholders monitoring becomes weak, while when ownership is highly concentrated, shareholders monitoring becomes strong. The extent of monitoring activities performed by individual shareholders regulates the risks associated with agency problems. Accordingly, monitoring activities undertaken by large shareholders affect use of other alternative monitoring mechanisms to control risks associated with agency problems.

The external auditors as one of alternative monitoring mechanisms (Barroso et al., 2018; Mitra et al., 2007), are expected to give their opinion on the truth and fairness of financial statements prepared by management. External auditors are required to obtain required audit evidence before issuing independent audit opinions (IFAC, 2014a). Auditors may rely on firms internal control or/and substantive audit procedures to obtain required audit evidence. The extent of reliance on internal control or/and use of substantive procedures depend on the strength of the firm's internal controls. However, the strength of control is likely to be affected by the extent of involvement of concentrated shareholders in monitoring activities. Highly concentrated shareholders are expected to be actively involved in monitoring which helps to strengthen internal controls (Jensen, 1993). The existence of strong internal control minimizes the risk of material misstatements of financial reports. Accordingly, external auditors rely more on firm internal controls and limit the use of detailed substantive audit procedures, which in turn leads to low audit fees.

In addition to active involvement in monitoring, shareholders may employ other control mechanisms such as high quality external auditors to help them to attest to the truth and fairness of financial reporting. However, use of these alternative control mechanisms increases monitoring costs which reduces the residual value available to shareholders (Jensen & Meckling, 1976). In this regard, a rational shareholder, who has already incurred monitoring costs by being actively involved in the firm, is likely to reduce extra monitoring costs so that there is more residual value in the firm. This implies that shareholders who are actively involved in the monitoring are likely to rely more on personal close monitoring rather than use of alternative monitoring mechanisms, which reduces demand for other monitoring mechanisms (Hay et al., 2008). This argument is in accordance with the substitution view which suggests that use of one type of monitoring mechanism leads to less use of other monitoring mechanisms (Hay et al., 2008). In this respect it is argued that audit fees are expected to be low in firms which have high concentrated ownership. Therefore, the hypothesis is suggested as follows.

H_2: *Concentrated Ownership is negatively related to audit fees.*

2.3 Government Ownership

Previous literature associates government ownership with high agency problems because of the lack of direct benefits to management of firms controlled by the government (Xu et al., 2005). This is based on the argument that management and control rights of government-controlled companies are in the hands of government-appointed officials who have no direct rights of cash flow as they receive no dividend from firms (Xu et al., 2005). This makes management wealth to be less tied to firms (Xu et al., 2005). Accordingly, managers' incentives become less aligned to firms and shareholders' interests (Tinaikar, 2014). In this regard, the management of government-controlled firms have low interest, if any, in firm's residual value. In addition, management of government-controlled firms can obtain personal benefits of control of the resources of firms with a small proportion of costs (Bozec & Dia, 2017) which could only amount to losing their positions in firms. As a result, low or lack of managerial interest in government-controlled firms creates a moral hazard as managers suffer little financial burden when they pursue personal interests rather than to maximize firm's value (Bertrand & Mullainathan, 2003). The existence of potential high agency problems in government-controlled firms is associated with weak internal controls which leads to high audit risk. This makes external auditors rely more on substantive audit procedures to obtain required audit evidence. The use of detailed substantive audit procedures results in high audit fees in government- controlled firms.

Despite the argument that government ownership is associated with high audit fees because of relatively high agency problems and weak internal controls in government-controlled firms, it is also argued that government shareholding is linked to low audit fees. Existence of separation of firm control and cash flow rights (Bozec & Dia, 2017) in government-controlled firms creates a situation whereby management of government-controlled firms may not require high-quality audits as means to give assurance on reliability of financial statements. After all, government representatives in government-controlled firms may not appreciate the benefits of high-quality audit output as mechanisms for controlling agency costs because they have low motivation to enhance firm performance.

In addition, government and management of government-controlled firms normally seek objectives other than performance in terms of profitability and efficiency (Shan, 2013); as a result, government ownership is associated with ineffective monitoring (Shailera & Wang, 2015). Furthermore, weak internal control can provide free rider opportunities to management to obtain personal benefits from firms (Shailer and Wang, 2015). In this situation, management of firms engages external auditors only to comply with regulations that require financial statements to be audited rather than to enhance quality of financial information. This behavior is related to information effect view, which suggests that sometimes insiders have no incentive to disclose information to outsiders (Lobanova et al., 2020). This implies that management of firms controlled by the government are more likely to lack motivation of providing more information and instead prefer to operate in high confidentiality (Lobanova et al., 2020) to conceal their private control benefits. Accordingly, extant literature indicates that government ownership is related to poor financial reporting (Al-Janadi et al., 2016). This has implications on the need for quality audit services and ultimately on audit fees. In this regard, firms under government ownership control are unlikely to require high quality audits which demand high audit fees. As a result, these firms are unwilling to pay high fees. Accordingly, external auditors are unlikely to charge premium audit fees to government-controlled firms because the audit is required mainly for statutory compliance. This situation may be more relevant in SSA countries with weak external governance mechanisms (Kaufmann et al., 2011) which is less likely to discipline management of government-controlled firms. This situation is aggravated by lack of laws, regulations and enforcement mechanisms to ensure quality financial reporting and requirement of high quality audit services. In this regard, the hypothesis is as follows.

H_3: *Government Ownership is negatively related to audit fees.*

2.4 Foreign Ownership

International business literature suggests that foreign investors face more risks of information asymmetry and uncertainty in foreign markets (Johanson & Vahlne, 2009). However, foreign investors in developing countries can help to improve corporate governance practices (Tran, 2020; Young et al., 2008) including those related to monitoring mechanisms of firms. Foreign investors have a greater power to monitor management than local investors because they are not part of domestic social networks (Young et al., 2008) and therefore they are considered to be more independent. In addition, foreign inventors

have more experience in international business than local investors on matters of use of good corporate governance mechanisms to reduce agency problems. Foreign investors may use this experience to export better governance mechanisms to subsidiaries operating in developing countries (Fang et al., 2019). Therefore, foreign investors address risks associated with information asymmetry and uncertainty in foreign markets by employing high quality audit services (He et al., 2014).

In addition, firms which have significant foreign ownership are expected to face complexity in financial reporting because of additional accounting and other compliance requirements associated with foreign investment. This implies that auditors of these firms are likely to undertake more audit procedures to comply with additional requirements imposed by foreign investors. In this regard, the existence of foreign owners in the firms listed in SSA countries is likely to create spillover effects on various aspects such as internal controls, financial reporting and quality of audit services. Accordingly, foreign shareholders are likely to require competent auditors who can provide high quality audits (Nelson & Mohamed-Rusdi, 2015) and compliance with additional requirements associated with foreign investment. Barroso et al. (2018) argue that to the degree that a foreign shareholders' stake increases in the firm, foreign shareholders require more quality financial reporting as means to safeguard their interests. Furthermore, according to He et al. (2014), foreign shareholders value good quality financial reporting more than local investors. Therefore, foreign investors prefer high quality auditors who can provide required assurance on reliability of financial information. In other words, foreign investors use high quality audit services as part of monitoring mechanisms to ensure information provided by management is true and fair. In this regard, foreign shareholders require firms to engage more competent auditors; however, more competent auditors are likely to charge premium fees on audit services (Mitra et al., 2007) which increases audit fees. The hypothesis is as follows.

H_4: *Foreign Ownership is positively related to audit fees.*

3. Data and methods

3.1 Data source and collection

This study utilizes data collected from annual reports of non-financial firms listed in eleven SSA countries. Based on availability, the reports were obtained either from http://www.AfricanFinancials.com or respective firms websites. The database results in the unbalanced panel sample comprising 531 observations of firms for the years 2005 to 2009.

Table 1 presents the distribution of samples by year and country. The table shows that most of the exchange markets in SSA have relatively few listed companies. The table shows that Nigeria, Kenya and Mauritius have more listed companies.

Table 1
Sample distribution by country and year

Country	Year					
	2005	2006	2007	2008	2009	Total
Zambia	12	14	10	7	6	49
Uganda	4	4	3	3	2	16
Tanzania	3	4	5	5	3	20
Nigeria	32	36	39	30	10	147
Namibia	2	2	2	2	2	10
Mozambique	0	0	1	1	1	3
Mauritius	12	13	13	16	16	70
Malawi	4	4	5	5	5	23
Kenya	19	20	23	22	14	98
Ghana	7	11	14	11	6	49
Botswana	9	9	11	10	7	46
Total	**104**	**117**	**126**	**112**	**72**	**531**

3.2 Variables and measurements

3.2.1 Dependent variable

The study uses audit fees as a dependent variable. The variable is represented by the natural logarithm of audit fees expenses presented in financial statements of each respective firm.

3.2.2 Independent variable

The study uses ownership structure as an independent variable. This variable is represented by different types of ownership structures which are concentrated, managerial, government and foreign ownerships. These ownership structures are measured as follows. First, *Managerial ownership* is the percentage of shares owned by the CEO. Second, *concentrated ownership* is the percentage of shares held by shareholders holding equal or more than 5% of all shares of a firm. Third,

government ownership is the percentage of shares owned by the government. Lastly, *foreign ownership* is the percentage of shares owned by foreign investors.

3.2.3 Control variables

As discussed in the above section, auditing is one of the mechanisms which help firms to control conflict of interests between shareholders, managers and other stakeholders. In this respect, some specific characteristics of firms which are related to this conflict and cost of external auditors are likely to influence the requirement of auditing services and audit fees (Chow, 1982). Previous literature suggests that firm's characteristics which are associated with complexity, performance, financing structure, and other governance structures of firms are likely to affect audit risk, audit procedures and eventually audit fees paid (Hay, 2013). In this respect, this study follows previous studies (Datta et al., 2020; Liang et al., 2020; Mitra et al., 2007) to control for variables that may affect audit fees. These variables include board size, board independence, firm size, leverage and profitability.

These control variables are measured as follows: *Board size* is measured by natural logarithm of total number of the board members. *Board Independence* is measured by the ratio of non-executive directors to the total number of directors. *Firm size* is represented by the natural logarithm of net assets value. *Leverage* is measured by the ratio of total debts to total assets. *Profitability* is measured by the ratio of income before tax to total assets.

3.2.4 Model

The analysis focuses on the relationship between ownership structure and audit fees. Additionally, the analysis recognizes that other firm's specific characteristics may affect the audit fees; therefore, these characteristics are incorporated in analysis to control for their effects. In this regard, the analysis equation is specified as follows.

$$\begin{aligned} Auditfee_{it} = \beta_o &+ \beta_1 Managerialowneship_{it} + \beta_2 Concentratedownership_{it} \\ &+ \beta_3 Governmentowneship_{it} + \beta_4 Foreignowneship_{it} + \beta_5 Boardsize_{it} \\ &+ \beta_6 Boardindependence_{it} + \beta_7 Firmsize_{it} + \beta_8 Leverage_{it} + \beta_9 Profitability_{it} + e_{it} \end{aligned}$$

4. Results and discussion

4.1 Descriptive statistics

Table 2 presents a summary of descriptive statistics results.

Table 2
Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Lnauditfees	462	10.89	1.11	6.52	13.71
Concentrated Ownership	470	0.62	0.23	0.00	1.00
Managerial ownership	463	0.03	0.08	0.00	0.48
Foreign Ownership	479	0.31	0.32	0.00	0.96
Government Ownership	433	0.05	0.16	0.00	0.88
Board Independence	448	0.24	0.16	0.00	1.00
Board size	458	8.87	2.59	3	15
Firm size	520	7.75	0.89	0.41	9.38
Leverage	520	0.53	0.28	0.00	3.19
Profitability	531	0.14	0.17	-0.69	0.96

Table 2 indicates that on average, 3% of shares of the firms are held by CEOs. Maximum number of shares held by CEOs is 48%, while the minimum is zero percent. The mean value suggests that on average CEOs do not own a substantial amount of shares. The table indicates the mean of concentrated ownership is 62% with a maximum of 100% and minimum of zero percent. These results suggest that a majority of shares is owned by shareholders who own equal or more than 5% of all shares of firms. This indicates that shares of the firms are highly concentrated. This increases the possibility of shareholders with majority ownership to influence various decisions, including those related to audit fees. Moreover, the results show the mean of government ownership is 5% with a maximum of 88% and minimum of zero percent. The table indicates the mean of foreign ownership is 31% with a maximum of 96% and minimum of zero percent. This implies that foreign owners may influence firms' internal governance mechanisms, which has an effect on audit risk, audit quality and eventually on audit fees.

In relation to results of control variables, Table 2 indicates that the mean of board independence is 24% with a maximum of 100% and minimum of zero percent while board size is between 3 to 15 members, with a mean of 8 directors. Firm size has mean of 7.75 with a minimum of 0.41 and a maximum of 9.38. Furthermore, the table indicates that a mean of leverage ratio is 53% with a maximum of 319% and minimum of zero percent. These findings indicate that firms are highly leveraged. This is likely to influence audit fees because debt holders may demand high quality audit services as means of monitoring agency problems. Finally, the table indicates the mean of profitability is 14% with a maximum of 96% and a minimum of negative 69%. Table 3 presents the results of pairwise correlations between variables.

Table 3

Pairwise correlations

	Lnaudit Fees	Managerial Ownership	Concentrated Ownership	Government Ownership	Foreign Ownership	Board Independence	lnBoard Size	Firm Size	Leverage	Profitability
Lnaudit Fees	1.000									
Managerial Ownership	-0.189***	1.000								
Concentrated Ownership	0.133***	-0.089*	1.000							
Government Ownership	0.064	-0.098*	0.085*	1.000						
Foreign Ownership	0.287***	-0.207***	0.456***	-0.184***	1.000					
Board Independence	-0.068	-0.222***	0.035	0.239***	-0.120**	1.000				
Board size	0.230***	-0.197***	-0.213***	0.075	-0.064	0.044	1.000			
Firm Size	0.578***	-0.172***	0.039	0.119**	0.147***	-0.052	0.353***	1.000		
Leverage	0.080*	0.063	-0.022	-0.022	0.050	0.012	-0.029	0.072*	1.000	
Profitability	0.105**	-0.141***	0.101**	-0.026	0.210***	0.058	-0.133**	-0.023	-0.290***	1.000

Notes: Significance level: *p < 0.10, ** p < 0.05, ***p < 0.01

The results of pairwise correlations indicate that most correlation coefficients are low, i.e., below 0.4, with exception of correlations between audit fees and firm size (0.578); and foreign ownership and concentrated ownership (0.456). As for ownership structures, the table indicates that managerial ownership is significantly negatively correlated with audit fees, while foreign ownership and concentrated ownership are significantly positively correlated with audit fees. The results show government ownership has insignificant correlation with audit fees. Furthermore, the table shows board independence is not significantly correlated with audit fees whereas board size, firm size, leverage and profitability are all significantly positively correlated with audit fees. Following the results of correlation analysis, the Variance Inflation Factor(VIF) analysis was carried out to quantify the severity of multicollinearity problems in variables included in the analysis. The results of VIF analysis, which are not presented here, suggest that there is no concern for multicollinearity.

4.2 Regression results

Table 4 presents results of ordinary least square pool regression on the relationship between ownership structure and audit fees.

Table 4

Results of Regression Analysis

VARIABLES	[1]	[2]	[3]	[4]	[5]
Managerial ownership	-2.258***				-1.510**
	(0.622)				(0.678)
Concentrated ownership		0.039			-0.613**
		(0.248)			(0.304)
Government ownership			-1.039***		-0.220
			(0.363)		(0.370)
Foreign ownership				1.050***	1.289***
				(0.154)	(0.192)
Board Independence	0.714**	0.549*	0.580*	0.360	0.561*
	(0.296)	(0.299)	(0.324)	(0.292)	(0.313)
Board size	0.263*	0.361**	0.279*	0.250*	0.161
	(0.152)	(0.153)	(0.166)	(0.147)	(0.164)
Firm Size	0.736***	0.734***	0.757***	0.693***	0.599***
	(0.056)	(0.057)	(0.062)	(0.055)	(0.060)
Leverage	0.386**	0.490***	0.377**	0.306*	0.293*
	(0.166)	(0.170)	(0.182)	(0.163)	(0.169)
Profitability	0.609**	0.724**	0.525*	0.635**	0.373
	(0.272)	(0.282)	(0.300)	(0.266)	(0.278)
Constant	4.320***	4.175***	4.096***	1.567	5.480***
	(0.706)	(0.742)	(0.819)	(0.986)	(0.801)
Observations	391	380	338	381	322
R-squared	0.561	0.547	0.536	0.598	0.610

Notes: Standard errors are in parenthesis

Significance level: *** p < 0.01, ** p < 0.05, * p < 0.1

As indicated in Table 4, a separate analysis is carried out for each independent variable. The separate estimation model aims to eliminate the effects of other independent variables on the independent variable included in the respective separate estimation model. Models 1 and 5 indicate managerial ownership is significantly negatively associated with audit fees which supports hypothesis 1. These results imply that high managerial ownership acts as incentives that align managers and shareholders' interests. The alignment of these interests reduces agency problems and related agency costs. This reduces monitoring activities and related monitoring costs such as comprehensive auditing which causes reduction of audit fees. These findings are similar to Shan et al. (2019) findings, which suggest that managerial ownership is negatively associated with audit fees once manager's ownership level is aligned to interests of shareholders.

Hypothesis 2 predicts a negative relationship between concentrated ownership and audit fees. The results of separate estimation for concentrated ownership presented in model 2 indicate concentrated ownership is positive but not significantly related to audit fees. However, the results in model 5 report a significant and negative relationship between concentrated ownership and audit fees. These findings confirm the argument that concentrated shareholders are closely involved in firms monitoring which reduces the need for other monitoring activities such as expensive audit services. In addition, the results are supported by the substitution argument, which suggests that the existence of one governance control mechanism leads to less demand for other mechanisms (Hay et al. 2008).

Model 3 presents results of estimation of a separate effect of government ownership on audit fees. The results indicate that the relationship between government ownership and audit fees is significant and negative. However, when all ownership structure variables are included in the analysis at the same time as indicated in model 5, the relationship turns positive but insignificant. In this regard, the result is not consistent.

With respect to foreign ownership variables, results in models 4 and 5 indicate foreign ownership is significantly positively related to audit fees. The results agree with the argument which suggests that foreign investors who are operating in foreign markets, particularly in a weak institutional environment, like SSA countries, face risks associated with foreign market uncertainty and information asymmetry (Cormier et al., 2013; Stevens & Makarius, 2015). Therefore, foreign investors demand high quality audit services to reduce agency problems caused by uncertainty and information asymmetry. However, the demand for high quality auditing services attracts high fees.

Finally, table 4 presents the results of control variables which indicates that all coefficients of these variables, except profitability in model 5, are significant and positively related with audit fees. The results suggest that specific characteristics of firms such as firm complexity, leverage and board structure influence audit fees.

5. Conclusion

Firm ownership structure is one of important internal corporate governance mechanisms which influence agency problems. Ownership structure acts both as monitoring and incentive mechanisms. This implies that ownership structure has implications on the application of other governance mechanisms to control agency costs. Therefore, this paper argued that ownership structure affects internal controls and quality of financial reports. As a result, this affects audit risk and extent of audit procedures carried out by auditors to obtain required audit evidence to enable auditors to give appropriate audit opinion. The audit risk and audit procedures performed by auditors to obtain audit evidence influence audit fees. In this regard, the ownership structure is one of important internal governance mechanisms that affect audit fees. This makes the study of the relationship between ownership structure and audit fees an interesting research agenda, particularly in the context of a weak institutional environment where firms depend highly on internal governance mechanisms to monitor agency problems.

This study utilizes 531 firm-year observations of the firms listed in eleven countries in SSA to examine association between different ownership structures and audit fees. To the best of the author's knowledge, this is a unique study which examines the relationship between ownership structure and audit fees using the sample of firms listed in eleven SSA countries. SSA is considered to have a weak institutional environment compared to developed (Barroso et al. 2018; Shan et al. 2019) and emerging markets (Khan et al. 2011; Liang et al. 2020) countries where most of the studies are conducted.

The overall results of the study provide evidence that ownership structure affects audit fees. In this regard, this study confirms the argument that ownership structure is one of key determining factors of audit fees in SSA countries. Specifically, the study indicates that the relationship between managerial ownership and audit fees is negative. This suggests that the amount of audit fees is low when managers own more shares of firms (Nelson & Mohamed-Rusdi, 2015). This implies that managers share ownership aligns interests of managers with interests of shareholders which in turn reduces agency problems (Jensen & Meckling, 1976) and related monitoring costs. The existence of low agency problems induces managers to provide more relevant and reliable information, which leads to reduction of audit risk. Low audit risk decreases use of substantive audit procedures which in turn reduces audit fees.

The results of the negative relationship between concentrated ownership and audit fees agrees with the argument that concentrated shareholders are actively involved in monitoring (Shleifer & Vishny, 1986; Jensen, 1993). Active monitoring by concentrated shareholders reduces agency problems which leads to reduction of audit risk associated with agency

problems. The reduction of agency problems induces concentrated shareholders not to incur additional agency monitoring costs (Jensen & Meckling, 1976) by minimizing use of other monitoring mechanisms such as a high quality audit to control agency problems. Since concentrated shareholders are directly involved in monitoring and are the receivers of a firm's residual value, they will avoid any extra monitoring costs because these costs will reduce their residual value. This is in agreement with Barroso et al. (2018) argument that concentrated shareholders have low motivation to use auditing services since they are residual owners of firms and final bearers of firms' costs. Therefore, concentrated shareholders are likely to demand audit services at low cost which implies low audit fees.

The results of positive association between foreign ownership and audit fees agrees with the argument based on spillover effects view. This is argument suggests that foreign investors in SSA, who mainly originate from countries with advanced corporate governance (Munisi & Randøy, 2013) and well-function institutions, are expected to prefer firms operating in a weak institutional environment like SSA to imitate good governance practices such as high quality audit services from their countries of origin. Furthermore, due to the existence of high uncertainty and information asymmetry, foreign investors in SSA are expected to demand high quality audit services which can provide confidence on reliability on financial reports generated by subsidiaries operating in a weak institutional environment. As a result, firms which have high foreign ownership are expected to pay high audit fees because high quality audit service carries a premium charge.

Overall findings of the study are similar to findings of previous studies (Adelopo et al., 2012; Barroso et al., 2018; Khan et al., 2011; Lin & Liu, 2013; Lobanova et al., 2020; Shan et al., 2019), which suggest that audit fees vary with the percentage of shares owned by different types of shareholders. Therefore, the paper argues that ownership structure, as one of fundamental internal governance controls, has some implications on the ways firms utilize other governance mechanisms, including auditing services, to monitor agency problems.

The findings have some practical implications on determinants of pricing of audit fees both to audit engagement clients and external auditors. The findings suggest that ownership structure characteristics are one of key determining factors of audit fees. Therefore, it is recommended that pricing of audit fees should take into account the structure of firm ownership.

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