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The effects of audit quality on the costs of capital of firms in Ghana

Effects of audit
quality

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639

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Abstract

Purpose – This paper aims to investigate the effects of audit quality on the cost of capital in Ghana.

Design/methodology/approach – Non-financial firms listed on the Ghana Stock Exchange (GSE) as well as non-listed firms from the database of Ghana Club 100 were included in the sample. Series are yearly, covering a sample of 40 firms during the six-year period, 2008-2013. The study employed the positivist research paradigm to establish the relationship between audit quality and the cost of capital.

Findings – There is evidence to suggest that the cost of debt and the overall cost of capital of firms in Ghana can be explained by the quality of the external auditors. The results also show that the large size of the board is associated with low cost of debt.

Research limitations/implications – The fact that the choice of quality measure is based on firm size only and other measurements of audit quality could not be measured. Future research may examine how other approaches to measuring audit quality affect cost of capital.

Practical implications – The results significant for those charged with assurance and regulation, as well as lenders and managers of companies.

Originality/value – The authors investigate how external auditing quality affects the cost of capital of firms operating in Ghana.

Keywords Cost of debt, Cost of equity, Developing country, Audit quality

Paper type Research paper

1. Introduction

Audit quality improves the reliability of financial statements to users of accounting information because it helps in confirming the companies' activities and affairs by management (Ali, 2008) and decreases the magnitude of users information risk (Fairchild, 2008). Audit quality improves the quality of earnings, makes financial statements acceptable to the tax authorities, expedites disposal of businesses and raising of finance both equity and debt (Azizkhanian *et al.*, 2010, 2013; Chen *et al.*, 2011). Audit quality is the ability of an auditor to detect material misstatement in the financial statements and accounting system of a firm, and report the material misstatement (DeAngelo, 1981). The probability of material misstatement detection by the auditor depends on his or her virtue and the probability of material misstatement reporting by the auditor depends on his or her independence.



Research shows that the cost of capital decreases as the quality of information increases and the auditor's reputation as one of the audit quality attributes can affect the cost of capital (Ahmadzadeh, Nahandi and Hasanazadeh, 2013; Krishnan, Li and Wang, 2013; Azizkhanian *et al.*, 2010). The relationship between audit quality and cost of debt or equity have received attention in the accounting and finance literature. However, the intervening influence of International Financial Reporting Standard (IFRS) on audit quality and its effect on cost capital is under-researched. In Ghana, medium to large companies are required to produce financial statements in accordance to the IFRS from 2007. It was expected that adoption of IFRS would improve financial reporting and reduce information asymmetry. There is lack of empirical evidence that test the effects of post IFRS adoption period audit quality on costs of capital in Ghana. Therefore, it becomes very necessary to investigate such phenomenon in the context of emerging market where stock market participation is low and financial institutions rather play a critical role in raising business finance.

Prior literature has examined the relationship of audit quality on the cost of debts (Cano-Rodriguez and Alegria, 2012; Gul *et al.*, 2013; Mansi *et al.*, 2004; Karjalainen, 2011; Fortin and Pittman, 2007; Pittmana and Fortin, 2004); the impact of audit quality on the cost of equity (Li, Stokes, Taylor and Wong, 2009; Chen *et al.*, 2011; Krishnan *et al.*, 2013); and the impact of corporate governance and cost of capital (Soh, 2011). These studies suggest that the quality of audit decreases the cost of debt and equity.

Khelif, Samaha and Azzam, (2015) examined the effect of voluntary disclosure, ownership structure attributes and timely disclosure on the cost of equity capital in emerging Egyptian capital market by using content analysis of annual reports. The authors find a negative relationship between the level of voluntary disclosure and cost of equity capital. They demonstrate that the increased levels of voluntary and timely disclosure reduce the cost of external finance and improve the marketability of firms' equities, which may directly impact growth opportunities, especially when information is communicated to investors in a timely fashion. Iatridis (2012) investigates whether being audited by a big auditor would lead to lower agency costs and lower cost of equity by focusing on emerging common-law South Africa and code-law Brazil. Their results show that though firms may be audited by high-quality auditors, their institutional differences influence significantly the firms' agency costs and cost of equity. For common-law South Africa, the presence of effective corporate governance mechanisms reduces agency costs, and the firm-level performance, growth and market determinants tend to lead to a lower cost of equity. Ramly (2012) examined the impact of corporate governance quality on firm's cost of equity of 101 listed firms on the Main Board of the Malaysian Bourse from 2003 to 2007. Regression results indicate that firms having high-quality corporate governance practices have lower cost of equity. Further, this research finds that firms' board structure and procedures, practices that promoted shareholder rights and enhanced accountability and audit process have significant reducing impact on the cost of equity.

In a study by Wahyuni (2013) from 2000 to 2010 in Indonesia, the author found that auditor specializations influenced the firm's bond rating by credit rating agencies and is negatively and significantly related to the cost of debt financing. Overall, their result suggests that auditor specialization matters to bond market investor in Indonesia. Hwang *et al.* (2008) examined the relationship between substituting auditors and the response of the bond market among listed companies in Korea. They investigated the direct relationship between substituting auditors and the bond market response, as well as the impact of substituting auditors on the bond market response to the quality of earnings. The evidence show that external investors both respond to the substituting of auditors and also take into account the switching behaviour when assessing the quality of earnings. The growth in

impacts is prominent for companies whose audit quality has improved, which relates to the fact that the investors' concern regarding switching of auditors reduces when switching of auditor causes an improvement in the auditing quality.

In Africa, Ghana is among the emerging economies with an increase in trade and foreign direct investments for the past decade. However, according to the "global doing business" report, the cost of doing business has been rising in Ghana. In spite of the rising cost of doing business in Ghana, various studies have been silent on the relationship between the cost of capital and other variables that determine it. Besides, in Ghana, stock market participation by firms is low, making a study on the influence of quality audit on cost of equity relevant to understand the phenomenon. Furthermore, debt financing constitutes a high percentage of firm financing in Ghana but research has not contributed how audit quality could reduce cost of debt to make doing business in Ghana cheaper to attract investors and boost exports. From the foregoing, it is important to appreciate how investors, both debt and equity, react to audit quality. This, we seek to unravel by investigating the relationship between audit quality and costs of capital.

Our study contributes to the accounting literature in the following ways. Firstly, we investigate the intervening influence of IFRS adoption on audit quality and its effect on costs of capital by examining a post adoption period data. Secondly, our study is conducted in a context, i.e. Ghana, where this kind of study is uncharted; however, equity and debt financing form the main capital structure of firms. Thirdly, our study examines the audit quality effects on costs of individual sources of funding (i.e. debt and equity separately) *vis-à-vis* the combined cost of capital (i.e. weighted average) by focusing on the Ghana setting. Finally, our paper unravel the importance of audit quality in reducing information asymmetry and how it in turns reduce the costs of raising finance.

We position the current paper in post adoption of IFRS as literature suggests that using IFRS improves accounting information quality. For example, [Daske *et al.* \(2008\)](#) opine that IFRS adoption will lead to improved transparency and higher-quality financial reporting, effectively enhancing firm information environment. Proponents such as [Christensen \(2012\)](#) claim that the new accounting standards improves transparency over national accounting standards. In the financial market, particularly in the banking sector, evidence exists that the banks charge relatively lower loan rates and apply conditions that are more favourable to IFRS adopters than to non-adopters ([Kim *et al.*, 2011](#)).

Moreover, while some find improvement in the accounting information quality in some countries that adopt international accounting standards ([Meeks and Swann 2009](#); [Chen *et al.*, 2010](#); [Chua *et al.*, 2012](#)), others do not see any significant improvement in reporting quality ([Kao and Wei, 2014](#); [Jeanjean and Stolowy, 2008](#)). Another stream of research find improvement in accounting quality but are quick to mention other factors that could contribute to the improvement besides the adoption of international accounting standards ([Barth *et al.*, 2006](#); [Soderstrom and Sun, 2007](#)). [Amidu *et al.* \(2016\)](#) suggest that the relatively high-quality earnings among firms in Ghana is attributed to the adoption of IFRS and the interaction of firm size to equity capital and the strategy of firms in Ghana to finance their operations with debt. We therefore argue that adoption of IFRS improves accounting information quality which subsequently reduces information asymmetry and eventually lowers the cost of capital.

Our results demonstrate that audit quality reduces the cost of capital. This supports the lending credibility theory that audit quality improves the credibility of financial reports which leads to reduction in cost of capital. Furthermore, the results of the study suggest that the size of the board, firm size, listed firms, tangible assets (PPE) and return on assets reduce the cost of capital. This findings of the study suggest that lenders and investors consider the

relevance of larger boards, listing status and tangible assets (PPE) as collateral and high return on assets to reduce the required rate of return.

The rest of the paper is organized as follows. Section 2 provides the institutional and theoretical review, of the Ghanaian economy and, literature respectively. Section 3 reviews relevant empirical literature and hypotheses development. In Section 4, we present the data, and estimable models, while Section 5 presents empirical estimation strategy and discusses the results. Section 6 concludes the paper.

2. Background and literature review

2.1 Institutional and sectorial review of Ghanaian economy

Ghana in the face of the global recession has had a robust economic growth even though since 2011 the rate has been declining. Three main sectors, namely, the service sector, the industrial sector and the agricultural sector, are the chief drivers of economic growth in the country. The service sector is the largest which in 2014 registered a growth rate of 5.6 per cent, a fall from 10.0 per cent in 2013. This sector has 49.6 per cent share of the country's GDP in 2014, a decline from 49.8 per cent in 2013. The decline in the growth rate of the service sector is as a result of fall in the growth rate of several sub-sectors. For instance, the social, community and personal service activities' sub-sector recorded a decline of 38.1 per cent in 2014; the "hotels and restaurants", "financial intermediation" and "trade, repair of vehicles, household goods" also recorded a decline of 25.8 per cent, 23.5 per cent and 16.1 per cent, respectively, in 2014. Even though other sub-sectors including "real estate, professional, administrative and support service activities" and "information and communication" sub-sectors recorded an increase of 16.0 per cent and 14.1 per cent, respectively, in the same year.

The second largest sector is the industrial sector and it recorded a whopping fall in growth rate of 0.8 per cent in 2014 from 6.6 per cent in 2013. Over the years, performance in this sector has primarily been underpinned by growth in mining and quarrying, with petroleum being the main contributor. However, with the exception of the manufacturing and the water and sewerage sub-sectors which attained marginally higher growth rates above their respective values in 2013, all other sub-sectors recorded more slowly growth in 2014.

The agricultural sector recorded a growth rate of 4.6 per cent, much higher than the growth rate of industry but lower than that of services in 2014. All other sub-sectors of this sector recorded positive growth, with the exception of "fishing" which decline significantly in 2014. According to SGER (2014), this sector recorded an increasing growth rates since 2011, from 0.8 per cent to 1.3 per cent in 2012 and to 4.9 per cent in 2013. Thus, recently the sector seems to have been making gains. However, it worth noting that the only sub-sector recording a higher growth rate in 2014 than 2013 is cocoa, thus giving rise to the reduced decline in the growth of the sector between the two years. In spite of the recent solid growth of agricultural sector, its contribution to national output continue to decline. This has been the trend since the sector in 2009 hit a peak of 31.8 per cent share of GDP, and experienced a slight fall in its share of GDP to 22.0 per cent in 2014, as against 22.4 per cent in 2013. Largely, this trend is as a result of the expansion of the service and oil sectors, which in relative terms have shrunk the contribution of the agricultural sector, though in absolute terms the sector has been expanding

2.2 Review of theoretical literature

Several theories can be used to explain the call for audit services. The lending credibility theory proposes that the fundamental role of the audit is to enhance credibility of the

financial reports and enhance the integrity of the services auditors are offering to their clients (Hayes *et al.*, 2005). The users benefit from the enhanced credibility in the audited financial report and these benefits are naturally reflected in the quality of investment decisions as these decisions are grounded on credible information (Chen *et al.*, 2011; Ahmadzedehe *et al.*, 2013). Therefore, our study of examining the effects of audit quality on costs of capital is underpinned by the lending credibility theory as we seek to establish the extent to which quality audit can reduce costs of raising business finance in Ghana. The preceding theory argues that shareholders would appoint competent auditors that will provide quality audited financial and systems reports which in turn increase investor confidence and corresponding lower required rate of return. This is conceptualized in Figure 1.

As indicated in the conceptual framework, when a firm chooses high-quality auditors, it improves the credibility of the information provided in the annual reports by enhancing the accuracy in the company's earnings (DeAngelo, 1981), decreases contracting costs in competitive capital markets (Fortin and Pittman, 2007; Ali, 2008). Given the significance of transparency of accounting information to lenders and shareholders, capital markets continue to examine the role of auditor choice to decrease the doubts that users of the financial statements may have about companies. Whether firms receive cost of debt benefits from high-quality audit is a controversial question for managers and capital market participants (Chen *et al.* 2011; Fortin and Pittman, 2007; Balsam, Krishnan and Young, 2003; Karjalainen, 2011; Krishnan *et al.*, 2013). If auditor assurance reduces investors monitoring costs (Watts and Zimmerman, 1986), then competition will push banks to pass along these cost reductions to lenders in the form of lower interest rates. However, the relationship between auditor assurance and loan interest rate is inconclusive (Li *et al.*, 2010). Kim *et al.* (2007), find that the interest expense paid by firms with prestigious Big 4 auditors is significantly lower than firms with non-Big 4 auditors due to the integrity given by Big 4 audit firms to the audited financial statements.

3. Review of empirical literature and hypotheses development

Various literature studies have used auditor's characteristics to explain audit quality because the size of an audit reflects auditor's capability and objectivity. Audit firm size is so important that capital market and its participants may evaluate audit quality using the size of the audit firm (Chen *et al.*, 2011) and not their ability to detect and report material misstatements of the financial statements (Ahmadzedehe, *et al.*, 2013). A big audit firm is viewed as very reliable and a higher reputation costs will provide the motivations to convey



Source: Authors

Figure 1.
Conceptual
frameworkSource:
Authors

higher audit quality (DeAngelo, 1981). Empirical research has mostly used Big 4 as a proxy for audit quality and this study also uses Big 4 as a measure for audit quality because Big 4 audit firms have higher professional competence (Francis, Maydew and Sparks, 1999); greater independence in the course of their engagement (DeAngelo, 1981); are able to specialize in a particular industry (Li *et al.*, 2010); are able to charge high audit fees (Dhaliwal, Gleason, Heitzman and Melendrez, 2008); and are able to have higher auditor tenure (Boone *et al.*, 2004; Kim *et al.*, 2013; Mansi *et al.*, 2004).

3.1 Audit quality and cost of equity

Fortin and Pittman, (2007) and Khurana and Raman (2004) argue that, higher audit quality leads to more credible and reliable financial information and improves the accuracy of a firms' earnings and reduces information risk which reduces the cost of equity. Krishnan *et al.* (2013) state that when investors are not privy to information, they will demand a higher rate of return to reward them for the risk of the use of their resources by managers. When companies change from industry low audit quality to high audit quality the market responds to the change and this reaction could either be because of an increased expectations of future cash flows or because of a decrease in discount rate (Knechel and Vanstraelen, 2007; Krishnan, *et al.*, 2013).

Azizkhanian *et al.* (2010) found that audit quality are significantly related to a lower cost of equity but only for firms audited by non-Big 4 audit firms whiles (Fernando *et al.*, 2010) find that Big 4 audit firms reduce the cost of equity in the USA and Australia. Research found that non state own enterprises with high audit quality obtain insignificant decrease in the cost of equity than their state-owned counterparts that employ high-quality auditors in China (Chen *et al.*, 2011). Embong *et al.*, (2012) find that audit quality reduces the cost of equity of listed firms in Malaysia. Baker and Al-Thuneibat (2011) find that low audit quality is positively related to the equity risk premium. Boone *et al.* (2008) and Baker and Al-Thuneibat (2011) argue that equity risk premium declines in the early years of tenure but rises as the years prolong. However, Alastair *et al.* (2011) find that the cost of equity of Big 4 auditors are insignificantly different from those of non-Big 4 auditors. This means that there is no significant association between audit quality and cost of equity and that investors' value auditor presence rather than audit quality.

Prior studies used either public listed firms or private firms but this study combines both listed and non-listed firms. Though, there are mixed findings on audit quality and cost of equity in the previous studies, this study argues that audit quality can reduce the cost of equity. Hence, our study hypothesizes that:

H1. There is a negative relationship between audit quality and cost of equity.

3.2 Audit quality and cost of debt

Previous studies have investigated the influence of specific characteristics of audit quality on the cost of debt (Huguet and Gandia, 2014; Kim *et al.* 2013; Karjalainen, 2011; Li *et al.*, 2010; Dhaliwal *et al.*, 2008; Pittmana and Fortin, 2004; Fortin and Pittman, 2007; Mansi *et al.*, 2004). Prior research (Gul, *et al.*, 2013; Ke, Lennox and Xin, 2012; Karjalainen, 2011; Kim, Tsui and Yi, 2011; Mansi *et al.*, 2004; Francis and Wang, 2008; Fortin and Pittman, 2007; and Pittmana and Fortin, 2004) has studied audit firm size and cost of debt and had generated mixed results.

Some studies found a negative association between audit quality and cost of debt (Karjalainen, 2011; Mansi *et al.*, 2004; Pittmana and Fortin, 2004; Kim *et al.*, 2007), show that private firms with high audit quality (external audit) pay a significant lower interest rate on

their debt than do private firms with poor audit quality (without an audit) in Korea and further state that the interest rate on loans is significantly lower for firms audited by Big 4-audit firms compared to firms audited by non-Big 4-audit firms. [Mansi et al. \(2004\)](#) found a negative association between audit quality and cost of debt for US listed firms. [Causholli and Knechel \(2012\)](#) found that audit quality plays a significant role in reducing the cost of debt in the USA. A similar study by [Gul et al. \(2013\)](#) finds a significant negative relationship between audit quality (as measured by Big audit firms) and cost of debt across the world; [Karjalainen \(2011\)](#) and [Huguet and Gandia \(2014\)](#) also find a significant negative relationship between audit quality (Big 4) and cost of debt among private firms in Finland. [Gul et al. \(2013\)](#) found that clients' firms benefit from Big 4 auditors in terms of lower cost of debt around the world is related to audits performed in stricter investor protection regime. Again, [Li et al. \(2010\)](#) and [Ali \(2008\)](#) show that in the USA, firms that employ quality audit enjoy significantly lower cost-of-debt financing. [Ke et al. \(2012\)](#) find a negative association between audit quality and cost of debt for firms audited by Big 4 auditors. They argue that Big 4 auditors increase the credibility of private and young firms financial statements which result in a fall in debt monitoring cost and finally to a reduction in the interest rate.

[Carmo et al. \(2016\)](#) examined the relationship between earnings quality and the cost of debt for Portuguese private companies. They employed ordinary least squares regression technique to test the relationship between earnings quality and the cost of debt. The results show that earnings quality has a greater effect on reducing the cost of debt in companies having audited financial statements. This finding suggests that banks give greater importance to audited financial information when deciding the interest rate. [Aldamen and Duncan \(2012\)](#) investigated the relationship between corporate governance and whether or not companies are able to access interest bearing debt in Australia. They found that debt companies have better corporate governance suggesting that the likelihood of accessing interest bearing debt is related to governance level.

Conversely, some other studies found no significant relationship between Big 4 and cost of debt ([Fortin and Pittman, 2007](#); [Kim et al., 2011](#)). Various research studies in Spain have studied the association between the cost of debt and audit quality in public companies, private companies and a combination of both groups and found no significant association between audit quality and cost of debt ([Huguet and Gandia, 2014](#)). [Kim et al. \(2011\)](#) found no significant relationship between voluntarily audited and non-voluntary audited firms, and [Fortin and Pittman \(2007\)](#) did not find significant relationship among firms audited by Big 4 and smaller auditors and their cost of debt. [Piot and Missionier-Piera \(2007\)](#) found that the presence of Big-5 auditors do not influence the cost of debt significantly and that the financial reporting and accounting number quality are the prime interest to debt-holders in French setting irrespective of whoever audits it. [Dhaliwal et al. \(2008\)](#) found no evidence that the relationship between earnings and the cost of debt falls as audit quality (measured by the size of audit fees) increase. Therefore, they suggest that lenders value auditor presence more than auditor choice ([Huguet and Gandia, 2014](#)). Guided by our choice of theory and conceptual framework, we hypothesize that:

H2. There is a negative relationship between audit quality and cost of debt.

3.3 Audit quality and cost of capital

The weighted sum of the cost of equity and the cost of debt are the cost of capital for a firm ([Modigliani and Miller, 1958](#)). [Francis et al. \(2005\)](#) claim that the cost of capital helps to link the company's long-term investment decisions directly to its long-term financing decisions.

The capital structure of a firm is often made up of debt and equity and a combination of these sources of finance give the overall cost of capital of the firm (Soh, 2011).

Research found that low audit quality have higher cost of capital than firms with high audit quality (Francis *et al.*, 2005). Chen *et al.* (2011) and Khurana and Raman (2004) found that audit quality significantly enhances the credibility of financial statements in the USA and Australia and find that audit quality significantly affects the cost of capital in the USA but found no evidence that audit quality affects cost of capital in Australia. They demonstrated that firms audited by large audit firms significantly reduces cost of capital compared to the firms which have not been audited by large audit firms. Auditors have the mechanism of detecting information distortion, improving information quality and consequently reducing investment risk and facilitating optimal decision-making (Ahmad *et al.*, 2014). Thus, audit reduces informational risk for the users of financial statements which eventually results in the reduction of return rate expected by investors. Mansi *et al.* (2004) examine the association between auditor's characteristics and cost of capital and found that there is a significant negative association between auditor's tenure and cost of capital. In other words, cost of capital is reduced by an increased auditor tenure. Other studies also find that auditor size (Big X audit firms), auditor industry specialization and auditor tenure are negatively associated with the client firm's cost of capital, but this findings is limited to only small client firms, reflecting the poor information environment associated with such firms (Fernando *et al.*, 2010).

Li *et al.* (2009) find that in addition to higher audit quality being associated with a direct reduction in the cost of capital, there is also a significant mitigation of the positive impact of high accruals on the cost of capital and therefore concluded that markets recognize the importance of both the insurance and assurance dimensions of audit quality. Ahmed *et al.* (2008) examined whether the use of industry specialist auditor reduces cost of capital for firms using Big 4 audit firms. They found that firms that use industry specialists' auditors (Big 4 auditors) have significant lower cost of capital than firms that use non-specialist Big 4 auditors. They further show that using an industry specialist auditor is important when alternative monitoring mechanisms, such as boards of directors or institutional shareholders are weak. This means that using Big 4 audit firms is unnecessary when alternative monitoring mechanisms are strong (Ahmed *et al.*, 2008).

Alireza *et al.* (2014) reviewed empirical evidence over the past decades to assess what researchers have done about the impact of audit quality on the cost of capital. The study finds a stream of literature explaining that audit quality of external auditor mechanisms such as auditor size, audit fees, non-audit services and auditor industry specialization are able to contribute towards enhancing the firm's performance and reducing information asymmetry and the cost of capital raised by firms. Theoretically and empirically to some extent, high audit quality of external auditors will lead to lower firm risk, information asymmetry and subsequently, a lower cost of capital.

Given that limited research actually combined the two components of cost of capital (cost of debt and cost of equity) despite the importance of these components to the capital market (Soh, 2011), this study examines the influence of audit quality and cost of capital. Though, there are few studies on audit quality and cost of capital (Pittman and Fortin, 2004), they seem to conclude that audit quality has a negative association with cost of capital. This study then proposes its third hypothesis that:

- H3. There is a negative relationship between audit quality and the weighted average cost of capital.

4. Data and measurements

This section seeks to address the source of data collection, sample and the criteria used to select the sample from the population, measurement of estimation variables, descriptive statistics and correlation analysis.

4.1 Data and sample selection

The population of this study consists of all the firms listed on the Ghana Stock Exchange for the periods 2008 and 2013 and the Ghana Club 100 firms for the period 2008 to 2013 financial years. The data are obtained from the annual reports of the companies. The data on the listed firms are obtained from the Ghana Stock Exchange's library, while the annual reports for Club 100 are obtained from Ghana Investment Promotion Council (GIPC) library. The Ghana Club 100 (GC 100) is an annual compilation of the top 100 (i.e. 100 most successful firms by size, profitability and growth) companies in Ghana to give due recognition to successful enterprise and it was launched in 1998 by the Ghana Investment Promotion Council (GIPC). Forty firms with sufficiently continuously available data for six years are used in this study. Among the 40 firms used for the study, 20 (50 per cent) are solely listed on the Ghana Stock Exchange, 8 (20 per cent) firms are solely Club 100 members and 12 (30 per cent) are both Club 100 members and listed on the Ghana Stock Exchange. All the firms uses both debt and equity capital. In total, 240 firm-year observations are obtained over the 2008-2013 period.

4.2 Measurement of estimation variables

The cost of equity (*COE*), is measured using the Gordon model as implemented in [Ahmad et al. \(2014\)](#) and [Ahmadzadeh et al. \(2013\)](#). This was computed by deflating the expected dividend by share price (see [Table I](#)). Growth rate (*g*) in the formula was computed by multiplying the return on capital employed (*ROCE*) by the percentage of profit retained for each year. Following the approach of [Pittmana and Fortin \(2004\)](#), [Francis et al. \(2005\)](#) and [Gul et al. \(2013\)](#), we measured cost of debt (*COD*) as the annual interest expense after tax in year *t* to the interest-bearing total debt (i.e. short and long term) outstanding during the year. Capital cost of companies consist of two components: cost of debt and cost of common equity. In this study, capital cost is obtained by computing weighted average cost of capital (*WACC*) of these two components as implemented in [Fernandes \(2014\)](#), [Brealey et al. \(2013\)](#) and [Soh \(2011\)](#).

This study uses KPMG, Deloitte and Touche, PricewaterhouseCoopers and Ernst & Young) as the evidence of Big 4 audit firms in Ghana. In Ghana, Big 4 firms practice auditing and assurance alongside with small sole proprietorships, locally owned partnerships and partnerships with some minimal international affiliation other than the Big 4. Audit quality has been measured in different ways in the accounting literature. For example, [DeAngelo, \(1981\)](#) used firm size as a measure for audit. [Becker et al. \(1998\)](#) and [Francis et al. \(1999\)](#) provided evidence in support of Big 4 as a measure for audit quality as they found that lower level of discretionary accruals can be observed for firms that appoint Big 4 auditors. [Lennox \(1999\)](#) found that the size of audit firm and reputation has a direct association with quality of report produced, however, [Kaawaase et al. \(2016\)](#) showed that there are no audit quality differences amongst Big 4 and non-big 4 firms in Uganda. Besides, [Carcello et al. \(2002\)](#) and [Miettinen \(2008\)](#) used audit fees as a measure of audit quality with the argument that audit fees reflect the magnitude of audit effort. Furthermore, audit quality has been measured using discretionary accruals ([Ronen and Yaari, 2008](#); [Pott et al., 2009](#)), as financial statements can be manipulated by management through the use of accruals to influence reported accounting numbers to their own benefit. It is expected that quality external audit should be able to identify and report such manipulations.

Table I.
Variables definition
and measurement

Variables	Variable definitions
<i>The dependent variables</i>	
Cost of debt (COD)	The cost of debt in year t is measured as $COD = (1 - T) \times \frac{\text{Interest expense}}{\text{Interest} - \text{bearing debt}}$
Cost of equity (COE)	Cost of equity is measured as $COE = \frac{DPS + 1}{P} + g$
Cost of capital (WACC)	This is measured as: $WACC = (1 - T) \times k_d \times (D/V) + k_e \times (E/V)$
<i>The independent variable (test variable)</i>	
Audit quality (AQ)	A dummy variable equal to 1 if the sample firm is audited by Big 4 audit firm, otherwise 0.
<i>Control variables</i>	
Leverage (LEV)	Measured as: $Leverage = \frac{\text{Total Liabilities}}{\text{Total Assets}}$
Plant property and equipment (PPE)	Collateral available to support borrowings, measured as $PPE = \frac{\text{Net plant property and equipment}}{\text{Total Assets}}$
Return on assets (ROA)	Measured as: $Return\ on\ assets = \frac{\text{net income}}{\text{Total Assets}}$
Firm size (FS)	Firm size is measured as: $FS = LN(\text{market value})$
Board size (BS)	It is measured as: $BS = \text{Number of directors on the board}$
Listed	Measured as 1 if the firm is listed, otherwise 0.
Club 100 (C100)	Measured as 1 if the firm is a member of the Club 100 from 2008 to 2013, otherwise 0
Beta (α)	α = Constant coefficient (intercept)
Beta (β_1)	β_1 = Coefficient of independent variable
Beta (β_2 – β_8)	β_2 – β_8 = Coefficients of control variables
Notes: T = tax rate; DPS = dividend per share; g = growth rate; P = share price; k_d = cost of debt; k_e = cost of equity; D = debt proportion which is the percentage of debt capital used by the firm; E = equity proportion which is the proportion of shareholders fund in the firm; V = value of firm is the total of debt and equity finance employed by the firm	

There have been few research studies on Big 4 audit firms and cost of capital (Krishnan *et al.*, 2013; Ahmadzede *et al.*, 2013; Chen *et al.*, 2011; Li *et al.*, 2009; Ahmad *et al.*, 2014). As in Angelo (1981) and Lennox (1999), we measure audit quality using the size of the firm, as big firms have concern for their reputation, greater ability to withstand client pressure, greater resources and a more developed audit strategy and procedures. Besides, Libby *et al.* (2006) found that Big 4 firms are more likely to demand for correction of misstatement of amounts recognised in the financial statements. This suggests that the Big 4 firms demand stricter compliance to reporting standards and regulations. Similar to that of Azizkhanian *et al.* (2010), we define audit quality as a dummy variable with a value of 1 if the firm is audited by a Big 4 audit firm, otherwise 0.

Leverage refers to book value of debt leverage, measured as the ratio of book debt to total assets (Azizkhanian *et al.*, 2013). Previous studies have established that smaller firms have higher risk than larger firms, so firm size (FS) is controlled (Khurana and Raman, 2004; Ahmadzede *et al.*, 2013). Firm size is measured as the natural log of the firm's market capitalisation and defined as share price multiplied by number of common stock. Plant,

property and equipment scaled by total assets is included as a control variable for the collateral value of assets (Karjalainen, 2011). Return on assets (ROA) is included to control for firm performance. It is measured as net income scaled by total assets. The study includes listed as a control variable for the client's listing status and measured as 1 if the firm is listed and 0 otherwise. The study includes club 100 as a control variable for the top 100 firms and is measured as 1 if the firm is part of Club 100 firms and 0 otherwise. This study controls for the effect of board size. It is measured as the number of directors on the board.

5. Empirical method and analysis

This section provides the empirical estimation strategy and analysis of results.

5.1 Empirical estimation strategy

Our discussion in Section 3 conditions costs of capital on audit quality. Taking guidance from this and controlling for other variables as in Khurana and Raman (2004), Fernando *et al.* (2010), Gul *et al.* (2013) and Francis *et al.* (2005), we model cost of equity, cost of debt and weighted average cost of capital as a function of audit quality and relevant control variables. Guided by our hypotheses, we employ three separate econometric models as below.

The cost of equity is modelled using the following empirical model:

$$COE_{it} = \alpha + \beta_1 AQ_{it} + \beta_2 BS_{it} + \beta_3 PPE_{it} + \beta_4 FS_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 Listed_{it} + \beta_8 C100_{it} + \mu_i + v_{it} \quad (1)$$

μ_i is firm-specific fixed effects and v_{it} is an idiosyncratic disturbance term.

In our estimation of equation (1), the assumption of cross-sectional independence of the error terms in the panel regression was highly unrealistic and violated. For example, O'Connell (1998) demonstrates the considerable size distortions that can arise when such cross-sectional dependencies are present but not accounted for. Furthermore, the *p*-value for the Hausman test is significant at 10 per cent level (i.e. 5.17 per cent), indicating that the random effects model is inappropriate. Therefore, we execute, as in equation (1), the robust fixed effects panel regression by employing the "panel corrected standard errors" (PCSEs) which accounts for the cross-sectional dependencies of the error terms. The subscript *i* on the intercept term suggests that the intercepts of the firms are different resulting from the firm fixed effects.

Contrary to the cost of equity model, our estimation of equations 2 and 3 shows that firm-specific effects are not of significance interest to the problem at hand, which made us to select the random effects panel regression, that essentially allows for a different error structure for each firm. A Hausman test is conducted and it shows that the random effects model is valid, as the firm-specific effects (μ_i) are found not to be significantly correlated with the explanatory variables. The *p*-value for the Hausman test is more than 10 per cent (i.e. 27.53 per cent and 70.86 per cent for cost of debt and weighted average cost of capital, respectively), indicating that the random effects model is appropriate. Furthermore, the cross-section random effects test comparisons between fixed and random models demonstrate no significant difference between the two models. Therefore, we execute the robust random effects panel regression as in equation (2) and (3) by using White cross-section standard errors and covariance to account for cross-sectional heteroscedasticity.

JFRA
16,4

The cost of debt model is specified as:

$$COD_{it} = \alpha + \beta_1 AQ_{it} + \beta_2 BS_{it} + \beta_3 PPE_{it} + \beta_4 FS_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 Listed_{it} + \beta_8 C100_{it} + \omega_{it} \quad (2)$$

Whiles the cost of capital model is specified as:

$$WACC_{it} = \alpha + \beta_1 AQ_{it} + \beta_2 BS_{it} + \beta_3 PPE_{it} + \beta_4 FS_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 Listed_{it} + \beta_8 C100_{it} + \omega_{it} \quad (3)$$

The composite error term ω_{it} consists of two components: ε_{it} , which is the cross-section, or individual-specific error component, and μ_{it} , which is the combined time series and cross-section error component and is called the idiosyncratic term.

5.2 Summary statistics and correlation analysis

We present the descriptive statistics of the variables for our empirical analysis in [Table II](#), as [Table III](#) displays the correlation between the estimation variables. The dependent variables are the cost of debt, cost of equity and weighted average cost of capital. The mean cost of debt, cost of equity and weighted average cost of capital are 10.6 per cent, 15.74 per cent and 14.45 per cent, respectively. However, elsewhere 5 per cent was the average ([Pittman and Fortin, 2004](#); Cano- [Rodríguez and Alegría, 2012](#), [Mansi et al., 2004](#)), making the cost of raising business finance in Ghana high. The cost of raising equity capital in Ghana is relatively high compare to debt, and this may explain why most Ghanaian firms rely on the

Variables Years	Obs.	Mean	SD	Min 2008	Max 2013
<i>Dependent variables</i>					
Cost of debt (COD)	240	0.105927	0.121269	0	0.65495
Cost of equity (COE)	240	0.157431	0.155524	0	0.80001
Cost of capital (WACC)	240	0.144486	0.119274	0	0.78208
<i>Independent variable:</i>					
AQ	240	0.7875	0.4099316	0	1
<i>Control variables</i>					
BS	240	8.333333	2.356628	3	16
PPE	240	0.2772089	0.2610474	0.002935	0.9829656
FS	240	7.154974	1.004995	5.227022	19.84547
ROA	240	0.0596975	0.00914635	0	0.5960634
LEV	240	0.01857744	0.2211615	0	0.9294249
Listed	240	0.825	0.3807612	0	1
C100	240	0.50	0.5010449	0	1

Notes: The cost of capital is made up of weighted average cost of capital (WACC), cost of debt (COD) and cost of equity (COE). AQ is audit quality and is measured as dummy variable with a value of 1 if a Big 4 audit firm audits the firm, otherwise 0. BS is the board size. It is measured as the number of directors on the board. Club 100 (C100) is the top 100 performing firms and is measured as 1 if the firm is part of Club 100 firms and 0 otherwise. Firm size (FS) is measured as the natural log of the firm's market capitalisation and defined as share price multiplied by number of common stock. ROA is return on assets. LEV is the Leverage of the firm and is measured as the ratio of book debt to total assets. LISTED is used to describe the client's listing status and measured as 1 if the firm is listed and 0 otherwise. The PPE is asset tangibility, which measures the physical property of the firm

Table II.
Summary statistics
on selected firm level
variables

Probability	BS	AQ	C100	FS	LEV	LISTED	PPE	ROA	WACC	COD	COE
BS	1.0000										
AQ	0.1653	1.0000									
C100	0.3794	0.0956	1.0000								
FS	0.6336	0.3533	0.5160	1.0000							
LEV	0.0957	-0.0899	-0.0987	-0.2516	1.0000						
LISTED	-0.1659	-0.0306	-0.4082	-0.4050	-0.0155	1.0000					
PPE	-0.0702	0.0305	-0.4608	-0.2711	0.2292	0.3378	1.0000				
ROA	0.2763	0.2648	0.3779	0.3071	-0.0314	-0.1122	-0.2648	1.0000			
WACC	-0.0970	-0.1490	0.0932	-0.1187	0.0492	-0.1033	-0.1006	-0.0741	1.0000		
COD	0.0024	-0.3067	-0.0181	-0.2051	-0.1414	0.2128	0.0370	-0.2033	0.2769	1.0000	
COE	-0.1603	-0.0093	0.0838	-0.0117	-0.0583	-0.1523	-0.1813	0.1164	0.6525	-0.0493	1.0000

Effects of audit quality

651

Notes: This table presents correlation coefficient estimated on sample of firms in Ghana. The cost of capital is made up of weighted average cost of capital (*WACC*), cost of debt (*COD*) and cost of equity (*COE*). *AQ* is audit quality and is measured as dummy variable with a value of 1 if a Big 4 audit firm audits the firm, otherwise 0. *BS* is the board size. It is measured as the number of directors on the board. Club 100 (*C100*) is the top 100 performing firms and is measured as 1 if the firm is part of Club 100 firms and 0 otherwise. Firm size (*FS*) is measured as the natural log of the firm's market capitalisation and defined as share price multiplied by number of common stock. *ROA* is return on assets. *LEV* is the Leverage of the firm and is measured as the ratio of book debt to total assets. *LISTED* is used to describe the client's listing status and measured as 1 if the firm is listed and 0 otherwise. The *PPE* is asset tangibility, which measures the physical property of the firm

Table III.
Correlation matrix

debt market to raise business finance. The appetite for debt financing for Ghanaian firms promotes the banking sector, as there is the market to supply debt finance. The average board size is about eight members and 27.72 per cent of PPE, constituting the total company assets, while on average there is 18.58 per cent of leverage per firm but with maximum leverage of about 93 per cent indicating that some companies mainly rely on debt as their main source of funding.

The results in Table III displays the correlation between the estimation variables. As expected, the correlation between audit quality and all three costs of capital variables are negative supporting the notion that quality of audit reduces cost of capital, as the confidence by investors in firms audited by the Big 4 is high and therefore will require lower rate of return. Similarly, firm size negatively relates to all three costs of capital variables indicating that larger firms enjoy lower cost of raising funding and this is consistent with existing evidence that firms with large market capitalisation produce lower returns compare to firms with smaller capitalisation (Fama and French, 1992, 1993). The evidence also indicates that PPE is recognised as a collateral for demanding lower cost of capital while high return on assets reduces overall cost of capital. Moreover, listed firms and larger boards attract lower cost of capital in raising funds.

5.3 Analysis of regression results

Table IV reports the results of our three estimation models. The results uphold all of our three hypotheses. As expected, audit quality has a negative coefficient with all the three costs of capital variables suggesting that high-quality audit provides a more credible and reliable information and improves firms reported earnings which reduces the cost of capital. However, amongst the three costs of capital variables, the relationship between cost debt and audit quality is statistically significant at the standard level, indicating that quality of

JFRA
16,4

652

	WACC	COD	COE
AQ	-0.0291 (-0.6897)	-0.0883 (-1.9697)**	-0.0054 (-0.1889)
BS	-0.0036 (-0.3512)	0.0122 (2.1356)**	-0.0180 (-4.1245)***
C100	0.0633 (1.7640)*	0.0629 (1.6874)*	0.0065 (-0.1999)
FS	-0.0127 (-1.4489)	-0.0183 (-2.1251)**	0.0007 (-0.1178)
LEV	0.0021 (-0.2217)	-0.0185 (-2.1003)**	-0.0006 (-0.0988)
LISTED	-0.0499 (-0.9816)	0.0765 (2.2421)**	-0.0631 (-1.5428)
PPE	-0.0437 (-0.6359)	0.0043 (-0.0665)	-0.0795 (-2.0525)**
ROA	-0.0666 (-0.5746)	-0.1238 (-1.2646)	0.0021 (-0.2217)
α	0.4774 (3.4704)***	0.3077 (2.0565)**	0.3713 (2.9440)***
<i>F</i> -statistic	1.3467	(3.8330)***	(3.0006)***
Adjusted R^2	0.0115	0.0866	0.0628
Observations	240	240	240

Notes: The dependent variables are cost of capital, which is made up of weighted average cost of capital (*WACC*), cost of debt (*COD*) and cost of equity (*COE*). *AQ* is audit quality and is measured as dummy variable with a value of 1 if a Big 4 audit firm audits the firm, otherwise 0. *BS* is the board size. It is measured as the number of directors on the board. Club 100 (*C100*) is the top 100 firms and is measured as 1 if the firm is part of Club 100 firms and 0 otherwise Firm size (*FS*) is measured as the natural log of the firm's market capitalisation and defined as share price multiplied by number of common stock. *LEV* is the Leverage of the firm and is measured as the ratio of book debt to total assets. *ROA* is return on assets. *LISTED* is used to describe the client's listing status and measured as 1 if the firm is listed and 0 otherwise. The *PPE* is asset tangibility, which measures the physical property of the firm. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively, with *t*-ratios in parentheses

Table IV.
Determinants of cost
of capital

firms audit is an important factor to lenders for determining their lending rate. This suggests that companies with a high audit quality (Big 4 external auditor) pay significant lower interest rate on debt capital than do companies with lower audit quality (non-Big 4 external auditor). This finding is consistent with that of Kim *et al.* (2007), Mansi *et al.* (2004), Huguet and Gandia (2014) who found that cost of debt is reduced with high audit quality in Korea, USA and Finland, respectively.

Furthermore, our finding in respect to cost of equity is consistent with existing literature as several studies have found that quality audit leads to lower cost of equity in Australia (Azizkhanian *et al.* 2010), in the USA (Fernando *et al.*, 2010), in China (Chen *et al.*, 2011) and in Malaysia (Embong, *et al.*, 2012). When firms avail their activities to high-quality audit and investors become privy to this information, they will demand lower rate of return in response, as quality audit reduces information risk which in turn reduces cost of equity. When equity investors are privy to information, they will demand lower rate of return to reward them for the risk of providing resources for the company.

Besides, our finding in respect to the weighted average cost of capital suggests that audit quality enhances the credibility of financial statements and hence reduces the overall long-term cost of capital. This evidence is consistent with findings elsewhere, such as Khurana and Raman (2004), where it was established that in the USA and Australia, quality audit reduces overall long-term cost of capital. Because the overall cost of capital links the company's long-term investment decisions to its long-term financing decisions, it is expected that companies will benefit from lower discount rate for their project's net present valuation and calculating internal rate of return. It can therefore be concluded that the capital markets (both debt and equity) recognise the importance of the assurance and insurance dimensions of higher audit quality (Li *et al.*, 2009)

Our results suggest that audit quality reduces information risk which in turn leads to lower cost of funds. This suggests that auditors have the mechanism of detecting information distortion, improving information quality and consequently reducing investment risk and facilitating optimal decision-making. Thus, audit reduces informational risk for the users of financial statements which eventually results in the reduction of return rate expected by all kinds of investors. Unaudited financial information is viewed as stained with information asymmetry, and thus, does not improve the efficiency of capital markets. Audit is therefore seen as a key contributor to trust and market confidence. This suggests that audit firms must continuously endeavour to enhance the audit quality in achieving higher trust and the level of market confidence.

It can be argued that if firms can benefit from raising cheaper cost of capital, value is created for the investors. In view of the limited yet emerging literature on the connection between audit quality and the cost of capital, more grounded external corporate governance mechanism, for example, audit quality of external auditor, can alleviate information asymmetry and the agency problems that features the capital markets. In an agency relationship in which information asymmetry issues emerge, the preparers of financial statements are thought to be unscrupulous in reporting financial information. As a consequence, the users of financial statements are unequipped for recognizing legitimate and untrustworthy financial information. In this circumstance, the interest for independent audits can be believed to bring about the financial statements of users receiving legitimate reports (Wallace, 1980). Subsequently, audit services inform the market that the financial statements provided by management are free from material errors.

Turning to control variables, overall weighted average cost of capital shows a negative relationship with board size, firm size, listed firms, PPE and return on asset variables, while it shows positive association with Club 100 and leverage. Furthermore, we find negative association between cost of debt and board size, firm size, leverage and return on assets, while only board size and PPE show negative relation with cost of equity. The evidence suggests that investors recognised the importance of larger boards, large capitalisation and marketable (listed) firms, larger PPE as collateral and high return on assets as means to reduce the required rate of return and this is line with exiting evidence as in Azizkhanian *et al.* (2013), Khurana and Raman (2004), Ahmadzadeh *et al.* (2013) and Karjalainen (2011).

Interestingly, the mean (intercept) variable for all three regression models are positive and statistically significant at standard levels, indicating that there are other important variables that may influence investors required rate of return. The *F*-statistic for both cost of debt and cost of equity models are statistically significant at 1 per cent level indicating the joint significance of the explanatory variables for the explained variable. In other words, the independent variables are important for explaining the variation in costs of equity and debt. However, the coefficient of determination shows a very low adjusted *R*-squared for all three models. This shows that audit quality *vis-à-vis* these control variables are not the only prime interest to market participants however, auditor presence is a sign that information provided in the financial reports are credible and are not misleading to stakeholders (bond holders, debt holders and shareholders) of firms in Ghana.

5.4 Robustness tests: sensitivity of audit quality and firm size to cost of capital

To test the robustness of the benchmark results, some variations are made to the results reported on table IV. We interacted the size of the firm with our main variable, the audit quality. This is to enable us ascertain the elasticity or the response of bigger firm to the level of cost of capital if they are audited with Big 4 accounting firms. Similar to Table IV, the

results are presented in columns. Column 1 is weighted average cost of capital (WACC), and Columns 2 and 3 are cost of debt (COD) and cost of equity (COE), respectively.

The results are presented in Table V and these seek to explore the overall sensitivity of the relationship between audit quality and firm size to cost of capital. The interaction between audit quality and size has a positive influence on cost of capital. This implies bigger firms who engage the services of Big 4 may seek to have or experience higher cost of capital and they are more sensitive to the level of cost of capital. However, this is considered not important given the statistically insignificant effect. The results of all other variables remain unchanged despite the interaction with the firm size.

6. Conclusion

The study inspired by the lending credibility theory tested the relationship between audit quality and cost of capital. There is a negative correlation between audit quality and all the components and overall cost of capital, i.e. cost of equity, cost of debt and weighted average cost of capital. This supports the lending credibility theory that audit quality improves the credibility of financial reports which leads to reduction in cost of capital. The relationship between audit quality and cost of debt is significant but not with cost of equity. In the case of control variables, board size, firm size, listed firms, PPE and return on asset are negatively related to cost of capital. However, cost of capital is positively associated with Club 100 and leverage. This findings of the study suggest that lenders and investors consider the relevance of larger boards, listing status and PPE as collateral and high return on assets to reduce the required rate of return. Furthermore, we find negative association between cost of debt and board size, firm size, leverage and return on assets while only board size and PPE show negative relation with cost of equity.

Variable	WACC	COD	COE
AQ	-0.2609 (-0.8003)	0.1110 (0.2563)	-0.3309 (-1.3134)
BS	-0.0029 (-0.3311)	0.0115 (1.5116)	-0.0147 (-2.3412)**
PPE	-0.0411 (-0.7216)	0.0025 (0.0374)	-0.1211 (-2.1282)**
FS	-0.0237 (-1.5885)	-0.0092 (-0.5164)	-0.0175 (-1.2807)
ROA	-0.0565 (-0.6069)	-0.1282 (-1.9713)**	0.2392 (2.7019)***
LEV	0.0010 (0.1038)	-0.0178 (-2.5310)**	0.0011 (0.1403)
LISTED	-0.0490 (-0.9055)	0.0752 (1.8208)*	-0.0600 (-0.9031)
C100	0.0707 (2.0916)**	0.0565 (1.7066)*	-0.0022 (-0.0461)
AQ*FS	0.0130 (0.7604)	-0.0110 (-0.4974)	0.0192 (1.3927)
A	0.6556 (2.6789)***	0.1595 (0.4826)	0.6649 (2.5886)***
Adj. R ²	0.0104	0.0810	0.0445
F-Stat	1.2799	3.3417***	2.2375**
Observations	240	240	240

Notes: The dependent variables are cost of capital, which is made up of weighted average cost of capital (WACC), cost of debt (COD) and cost of equity (COE). AQ is audit quality and is measured as dummy variable with a value of 1 if a Big 4 audit firm audits the firm, otherwise 0. BS is the board size. It is measured as the number of directors on the board. Club 100 (C100) is the top 100 performing firms and is measured as 1 if the firm is part of Club 100 firms and 0 otherwise Firm size (FS) is measured as the natural log of the firm's market capitalisation and defined as share price multiplied by number of common stock. LEV is the Leverage of the firm and is measured as the ratio of book debt to total assets. ROA is return on assets. LISTED is used to describe the client's listing status and measured as 1 if the firm is listed and 0 otherwise. The PPE is asset tangibility, which measures the physical property of the firm. AQ *FS is the interaction of audit quality with the size of the firm. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively, with *t-ratios* in parentheses

Table V.
Sensitivity of audit
quality and firm size
to cost of Capital

The results of this paper give rise to three policy implications. First, the study confirms that external audits add credibility to financial statement as envisaged by the International Standards on Auditing. It increases the value of financial reports which reduces information asymmetry and subsequently reduce cost of capital. Therefore, firms should negotiate interest rate and cost of equity with reference to their financial statements. Secondly, regulators and external auditors can use the result of this study to grow the audit industry in Ghana. This is because the value of external audit on cost of capital can be deployed as a sale strategy to encourage the numerous companies who do not conduct external audits to begin, thereby expanding the industry. This can reduce lowballing and the intense price competition which affects audit quality, a phenomenon associated with a small audit market. Finally, regulators through workshops, conferences and supervision must promote audit quality so the audit market can expand as a result of reduced cost of capital associated with audit quality.

Our study is not devoid of limitation. The fact that our choice of quality measure is based on firm size and we are unable to test other measurements of audit quality. Yet, our results are significant to those charged with assurance, regulation as well as lenders and managers of companies. Future research may wish to examine how other approaches to measuring audit quality affect cost of capital. We further recommend future studies into how external audit quality influence the pricing mechanism of banks.

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