

# The effects of IFRS adoption and firm size on audit fees in financial institutions in Ghana

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## Abstract

**Purpose** – This study aims to investigate the effects of international financial reporting standards (IFRS) adoption and firm size on auditors' fees determination in the Ghanaian financial industry.

**Design/methodology/approach** – The authors use the annual report of 52 listed and non-listed firms spanning from 2003 to 2014. Guided by the hypotheses, the authors conditioned audit fees on IFRS adoption and firm size and execute robust fixed effects panel regression.

**Findings** – The results show that IFRS adoption has a positive coefficient with audit fees suggesting that the adoption of IFRS, indeed, increases the audit fees paid by banks and insurance firms, as well as the industry as a whole. The results are consistent with the idea that IFRS adoption increases auditor efforts with respect to time and complex nature of some aspect of the standards. Again, as expected, the coefficient of size is positively and significantly related to audit fees. This indicates that the size of the auditee plays a vital role in determining audit fees.

**Research limitations/implications** – The study is limited by industry (i.e. the financial services industry) and geography (i.e. Ghana). The authors propose further research that will widely consider other sectors and countries to improve the current scanty literature in this area. Besides, theoretically, the study is limited to the lending credibility theory and feels compelled to reiterate the importance of considering alternative theoretical perspective(s) in future research.

**Practical implications** – This study is significant to practitioners as it demonstrates the importance of the determinants of the auditors' fees. It helps auditors to apply the relevant charging formula when determining audit fees, while it helps managers to improve upon the quality of reporting to control audit bill and forecasting their audit expenditure.

**Originality/value** – The results of the study extend the literature on the cost side of IFRS adoption by investigating the financial services industry and non-listed firms in a new context, i.e. a developing country where this research is uncharted. The existing studies based their analysis on either cross-section or pooled analysis and shorter post-adoption period (Cameran and Perotti, 2014). However, using an extended post-adoption period data, the authors base the study on analytical panel model, which directly examine the cost side of IFRS adoption with size as joint key explanatory variables with emphasis on financial institutions and external auditors.

**Keyword** Audit fees

**Paper type** Research paper



## 1. Introduction

Despite the numerous benefits associated with international financial reporting standards (IFRS) adoption, it is not without implementation challenges. Adoption and implementation of IFRS may be associated with cost that is materially different from complying with domestic generally accepted accounting principles (GAAP) (Barth *et al.*, 2008). This cost

could be significant enough to deter compliance especially by firms with limited resources. Another major challenge to IFRS implementation has been the complex nature of particular standards (Larson and Street, 2004). The complexity associated with the application of the new standard has attracted deep concerns from various stakeholders including preparers of financial statements, directors and auditors. As the new standard increases the disclosure, it demands greater amount of work and time to extensively verify and provide assurance concerning the audited financial statements (Hoogendoorn, 2006). Therefore, concerns have been raised about the effect of IFRS on audit fees. According to Jermakowicz and Gornik-Tomaszewski (2006), earlier adopters of the new standards have raised concerns over the huge preparation and certification costs.

De George *et al.* (2013) posit that increases in the cost of audit have been linked to IFRS-related mandatory implementation cost. The adoption of IFRS has two inverse impacts on audit fees (Cameran and Perotti, 2014; Kim *et al.*, 2012). One perspective is that greater effort is demanded from auditors, which is likely to be reflected in higher charges. The other perspective is that IFRS enhances the quality of financial reporting, so expected expense could minimize due to lower inherent risk associated with the audit.

Examination of prior literature on the effect of IFRS shows that the focus has been on reporting quality but little on related cost of adoption. Besides, Abu Risheh and Al-Saeed (2014) found a similar gap after an empirical review of the extant literature on IFRS adoption. Indeed, accounting research that directly examines the relationship between financial institutions and their auditors are very few regardless of the economic importance of the sector (Fields *et al.*, 2004). Currently, little is known on the impact of the new standard on audit fees more especially with the financial institutions (Cameran and Perotti, 2014; Fields *et al.*, 2004; Kanagaretnam *et al.*, 2010; Krishnan and Yu, 2011).

It can be argued that the level of impact of the new standard on the various sectors is likely to be enormous. However, the obvious question that arises is what has been the effect of this new standard on the individual sectors of the economy of various countries that adopted the new standards including Ghana? The audit fees is part of the implementation costs of transferring from local GAAP to the adoption of IFRS and audit activities are critical aspects of the change to the new accounting standards. In this study, we investigate the effect of the introduction of IFRS on the determination of the auditors' fees in the Ghanaian financial services industry. We argue that the introduction of IFRS increases the auditors' efforts in performing the audit, which is likely to be translated into fees charge by the auditors. This view has been debated amongst practitioners and the professional press has reported an increase in audit fees paid because of the adoption of IFRS by European firms (Accountancy Magazine, 2005, 2006). Furthermore, a survey conducted by the Institute of Chartered Accountants England and Wales among investors, accountants and auditors across 23 EU countries showed a significant increase in audit fees charged by auditors following IFRS implementation (ICAEW, 2007). Kim *et al.* (2012) found that audit fee increases significantly because of increase in audit complexity brought about by IFRS adoption across 14 European countries by developing an empirical audit model to examine the effects of IFRS adoption on audit fees charged by auditors. The aforementioned studies normally exclude the financial industry and mainly focused on listed firms. We, therefore, extend the previous findings of IFRS adoption and audit fees charged by auditors as we concentrate on the financial services industry in a new environment (i.e. developing country). Furthermore, contrary to previous studies, our study considers both listed and non-listed firms and comprises all major banks and insurance firms in Ghana. It has become more critical to study the relationship between auditors and financial institutions following the most recent global credit derivatives meltdown originated by financial institutions. The

credit derivatives turmoil stressed the importance of internal and external control mechanisms in the financial services industry. This is in part because of the inherent opacity of banks arising from their intermediation role as providers of liquidity (Diamond, 1984) and delegated monitors (Diamond and Dybvig, 1983). Increased sophistication in bank business models has heightened the problem of bank opacity (Morgan, 2002; Flannery *et al.*, 2004). Consequently, an auditing activity plays an important role in such an opaque environment in mitigating information asymmetries.

Turning to the size effect of audit fees, previous empirical studies have examined and established that there is a relationship between audit fees and firm size (Cameran and Perotti, 2014; Fields *et al.*, 2004; Simunic, 1980). However, the evidence has been mixed, with some studies establishing a negative association between firm size and audit fees (De George *et al.*, 2013; Fung *et al.*, 2012). On the contrary, several studies have found a positive relationship between firm size and audit fees (Cameran and Perotti, 2014; Shan and Troshani, 2016; Premuroso and Bhattacharya, 2008; Hay *et al.*, 2006). Therefore, given the existing mixed evidence, we provide new evidence to improve the clarity of the literature in a new context of a developing country and industry-specific of how audit fees is conditional upon firm size.

Our analysis focuses on the Ghanaian financial industry. The financial sector was one of the first sectors in Ghana to fully implement the IFRS effective 2007 after it was officially adopted in the same year. The Bank of Ghana, the regulator, made it mandatory for the banking industry. This was necessary considering the crucial role played by the financial institutions to the economic development of Ghana. We argue that Ghana is suitable for our study because the Ghanaian banking and the listed firms are obliged to adopt IFRS, and therefore, allows us to examine the audit fees effect of the mandatory adoption of the new accounting standards. Furthermore, as robustness checks, we, therefore, separate our sample into listed and non-listed firms to test the difference in audit fee in both categories. Besides, we segregate the bank sample into domestic and foreign ownership to test whether there is a significant difference in audit fee between the two categories.

From the foregoing, there is a general consensus in the accounting literature that IFRS adoption and firm size serve as an increasing function of audit fees. In view of the above, our study contributes to the literature in three different ways. First, examination of prior literature shows that the focus has been on reporting quality and IFRS adoption but little on related cost of adoption (Abu Rishah and Al-Saeed, 2014). Indeed, accounting research that directly examines the relationship between IFRS adoption and audit fees are few. Griffin *et al.* (2009) found that audit fees increase with the adoption of IFRS in New Zealand, Vieru and Schadewitz (2010) examined the audit fees determinants in the transition year to the IFRS in Finland for small and medium-sized firms, while Kim *et al.* (2012) investigated IFRS adoption and audit fees in European countries. All major studies have excluded the financial sector and focused on listed firms with exception of Cameran and Perotti (2014), who investigated the IFRS adoption and audit fees in Italian banking industry. We extend the literature by investigating the financial services industry, as well as non-listed firms in a new context i.e. a developing country where this research is uncharted. Second, the existing studies based their analysis on either cross-section or pooled analysis with shorter post-adoption period (Cameran and Perotti, 2014), however, our analysis is based on analytical panel model by considering 530 firms' year data from 2003 to 2014 made up of both listed and non-listed firms in the Ghanaian financial services industry. Finally, we directly examine the cost side of IFRS adoption with size as joint key explanatory variable with IFRS adoption, with emphasis on financial institutions and their auditors. Currently, little is known on the impact of the new standard on audit fees more especially in the financial

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institutions (Cameran and Perotti, 2014). The outcome of this study provides additional evidence to the scanty literature on the impact of IFRS adoption on financial sector and contributes to the practitioners' debate on audit fees and IFRS adoption. This is one of the few studies that directly examines the cost side of IFRS adoption with a focus on audit fees.

We execute the robust fixed effects panel regression by using the "panel corrected standard errors" (PCSEs), which accounts for the cross-sectional dependencies of the idiosyncratic terms. Our results show that IFRS adoption has a positive relationship with audit fees suggesting that the adoption of IFRS indeed increases the audit fees paid by banks and insurance firms and the industry as a whole. Our finding is consistent with existing literature as several studies have found that IFRS adoption leads to increased audit fees in New Zealand (Griffin *et al.*, 2009), in Finland (Vieru and Schadewitz, 2010), in China (Lin and Yen, 2016) and in Australia (De George *et al.*, 2013). The results are consistent with the idea that IFRS adoption increases auditor efforts with respect to time and complex nature of some aspect of the standards. Again, as expected, the coefficient of *SIZE* is positively and significantly related to audit fees. This indicates that the size of the auditee plays a vital role in determining the audit fees charged by auditors.

The rest of the paper is organized as follows. Section 2 reviews relevant theoretical and empirical literature and hypothesis development. Section 3 discusses the research methodology, the measurement of key variables in the study and data. Section 4 discusses the regression results, and finally, Section 5 provides the conclusion and policy implications.

## 2. Literature review

This section provides a review of salient theoretical and empirical literature on audit fee, size and adoption of IFRS.

### 2.1 Review of theoretical literature

Several theories can be used to explain the relationship between IFRS and audit fees. However, this study adopts the lending credibility theory to explain IFRS and audit fees. The choice is premised on the assumption that IFRS increases disclosure requirements, which requires expertise and experience to audit. The level of expertise and experience required to audit an IFRS-compliant financial statements must be compensated through higher fees. In addition, an auditor with such expertise and experience would increase the credibility of the financial statements so might charge for it. Evidence abound to suggest that, the Big Four have a comparable higher fees because of their reputation and the credibility they lend to audited financial statements.

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; Ahmadzede *et al.*, 2013). When a firm chooses high-quality auditors, it improves the credibility of the information provided in the annual reports by enhancing the quality in the company's earnings (DeAngelo, 1981). 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.

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## 2.2 Review of empirical literature and hypotheses development

A growing body of empirical literature have investigated the effect of IFRS adoption on different strands of financial reporting including the effect of IFRS adoption on audit fees. For example, [Griffin \*et al.\* \(2009\)](#) examined the effects of overseas and local governance regulatory changes on the audit and non-audit fees of audit firms in New Zealand. Data on annual audit fee, non-audit fee and financial data for 653 company-year observations was obtained from the Osiris database covering from 2002 to 2007. Using pool cross-sectional regression analysis, [Griffin \*et al.\* \(2009\)](#) found that IFRS adoption is associated with significant increase in audit fees in the year before IFRS adoption, the year of adoption and the subsequent years after. However, the authors did not find similar association between non-audit fees and IFRS. In actual fact, non-audit fees declined over the period of the study. Moreover, a separate analysis performed by the authors revealed that the Big Four auditors show a significant fees increase in the year of adoption of IFRS than the non-Big Four auditors.

In a similar study, [De George \*et al.\* \(2013\)](#) investigated the effect of IFRS adoption on audit fees involving 907 listed Australian companies from the year 2002 to 2006. The authors found that IFRS adoption has a significant positive association with audit fee increases. In fact, on the average, audit fees increased by 23 per cent in the year of adoption. Further analysis also suggests an abnormal increase of 8 per cent in audit fees in the year of adoption beyond normal annual increases in fees. Furthermore, [De George \*et al.\* \(2013\)](#) found that smaller firms show disproportionate larger increases in audit fees as compared to larger firms during the adoption of IFRS.

In the same vein, [De Fuentes and Sierra-Grau \(2015\)](#) further provided deeper understanding about the effect of IFRS adoption on audit and non-audit fees for a sample of Spanish listed companies from 2003 to 2009. Using ordinary least squares regression, the authors documented that audit fees witnessed an increasing trend from 2003 to 2009 and that both parent companies accounts and group accounts attracted high audit charges increasing on the average by 13 and 15 per cent, respectively. Concerning non-audit fees, the results show a more erratic behavior, which the authors attributed to a local regulation, which aims at ensuring auditor independence.

[Cameran and Perotti \(2014\)](#) examined the impact of IFRS adoption on audit fees from 1999 to 2006 involving 136 quoted and unquoted banks in Italy. Particularly, the authors examined the effect of first and second years of IFRS adoption on audit fees. Further, they looked at the effect of trading derivatives on the association with audit fees. The results reveal increased audit fees are charged in the first and second years of IFRS adoption in Italy. Regarding the effect of derivatives on the association, the findings suggest that the financial instrument held for the purpose of hedging is associated with increase in audit fees. [Shan and Troshani \(2016\)](#) examined the same association between IFRS and audit fees in the Chinese setting. Using a multivariate analyzes on a sample of 1,798 firm-year observations of listed companies on the Shanghai stock exchange, they find that the adoption of IFRS raises audit fees for all the companies under study. They also found that even though the association was positive for all the companies, the effect was stronger with respect to smaller firms than larger firms.

[Lin and Yen \(2016\)](#) provided further evidence of the relationship between IFRS adoption and audit fees in China. Specifically, they examined how an auditor and client experience with IFRS affect the auditor's pricing (i.e. fees) decisions in the early years of IFRS adoption. Data on audit fees and audit opinion was collected from the annual reports of the companies, which were, in turn, retrieved from Taiwan Economic Journal database. In all, they examined 4,129 sample observations with A-shares listed on the Shanghai and Shenzhen

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stock markets from 2005 to 2008. Their results show that audit firms with IFRS related experience before the IFRS adoption charge high fees in the early years of IFRS adoption. On the other hand, clients with related IFRS experience paid lower charges for audit fees in the initial years of IFRS adoption. The authors further found that the financial reporting complexity of a particular firm has a significant effect on the IFRS adoption-audit fees association. The study concludes by recommending that the effect of IFRS adoption on audit fees is not universal and that the financial reporting complexity of a particular firm and industry should be taken into account.

Using an analytical audit fee model, [Kim \*et al.\* \(2012\)](#) empirically examined the impact of IFRS adoption on audit fees with a sample of 29,206 firm-years from 14 EU countries over the years 2004-2008. They also examined how audit task complexity may affect the relationship. Findings show that audit fees increases with the adoption of mandatory IFRS adoption and this relationship is further strengthened by audit task complexity. In addition, the authors find evidence to the effect that the extent of differences in accounting between IFRS and a country's local GAAP increases audit premium and audit fees declines with the improvement in financial reporting quality with the adoption of IFRS.

[Lin and Yen \(2016\)](#) also examined the relationship between IFRS adoption and audit fees in China. The authors further investigated the effect that state ownership and auditor size may have on the relationship. The sample for the study consisted of 2,000 listed companies in China. Specifically, the study covered three years before the adoption of IFRS and three years after IFRS adoption. The results indicate that audit fees have seen an astronomical increase in the post-IFRS adoption period and this is particularly the case for low-state ownership firms and companies audited by the Big Four firms.

To increase the understanding of how IFRS adoption is related to audit fees, [Vieru and Schadewitz \(2010\)](#) examined the effect of IFRS adoption on audit fees for 73 firms listed on the Finland stock exchange. Data collected on audit and non-audit fees are based on the years 2004 and 2005 with 146 firm-years. They measured IFRS transition complexity by quantifying the magnitude of IFRS adjustments based on an index of disparity between IFRS and local accounting standard. Findings suggest a significant positive association between all fees paid, including non-audit fees to auditors and IFRS adoption. Further, the authors found that the association was more significant in 2004 as compared to 2005. Testing the fees separately, they found that the association between the magnitude of IFRS adjustments and audit fees was not significant for the years 2004 and 2005.

Similarly, [Choi and Yoon \(2014\)](#) find that fees increased significantly after the adoption of IFRS in South Korea and that the phenomenon was more regular with firms audited by the Big Four audit firms. Similar findings were documented by [Yaacob and Che-Ahmad \(2012\)](#) when they examined the same association in Malaysia for the years from 2004 to 2008. [Abu Rishah and Al-Saeed \(2014\)](#) also examined the same topic in Jordan. They sampled 91 Jordanian industrial companies listed in the Amman stock exchange over the period of 1998-2011. Their findings indicate that audit fees have increased after the adoption of IFRS by listed Jordanian companies.

However, [Goncharov \*et al.\* \(2012\)](#) provided a contrary evidence of the relationship between IFRS adoption and audit fees. Their sample included listed real estate companies in the European community over the years 2001-2008. They further examined the effect of the fair value and cost models of recording investment on such a relationship. Their initial findings indicate that IFRS is not significantly associated with audit fees. Regarding the effect of the approach used to record investment asset on the association, they find that firms moving from depreciated cost under domestic standards to reporting depreciated cost under IFRS have higher audit fees compared to companies using fair value.

Another cross-country empirical study was conducted by [Chen et al. \(2014\)](#). Specifically, he examined the same objective for a sample of 24,112 firm-year observations from 17 European countries for the year 2000-2009. He further examined the moderating effect of auditors IFRS expertise on the relationship between IFRS adoption and audit fees. Preliminary findings indicate that audit fees have increased after the adoption of IFRS. He further found that auditors with lower IFRS expertise charge high audit fees as compared to those with high IFRS expertise. Looking at the relevance of IFRS adoption in Africa, [Nnadi and Soobaroyen \(2015\)](#) examine the effects of IFRS adoption on foreign direct investment in 34 African countries over 20-year period. Their results show a negative relationship between IFRS adoption and foreign direct investment in Africa. They found out that foreign direct investors are not much concern about IFRS-regulated environment but cost of operating in those environments, rule of law, the legal system and the level of corruption as their major concerns.

From the evidence emanating from the review of previous empirical studies on IFRS adoption and audit fees, our study hypothesizes that:

*H1.* There is a positive relationship between IFRS adoption and audit fees.

Turning to size, total assets of the client's company is used as a measure of the size of the client's firm. This is in line with prior literature on audit fee models ([Cameran and Perotti, 2014](#); [Fields et al., 2004](#); [Simunic, 1980](#)). For this study the size of the company is measured as the natural logarithm of total assets. Evidence from prior studies on audit fees suggests that size is one of the most important explanatory variables in the determination of audit fees. Generally, findings on the effect of firm size on audit fees indicates a significant correlation between the variables. Few empirical studies have found a negative association between firm size and audit fees ([De George et al., 2013](#); [Fung et al., 2012](#)). This has generally been attributed to several factors including the fact that larger firms have stronger bargaining power than smaller firms, which enables them to pay discounted audit fees. Additionally, larger firms usually have more efficient accounting information systems, as well as more effective internal audit units than the smaller firms and this goes a long way to reduce the workload of external auditors, thus reducing audit fees. On the contrary, several studies have found a positive relationship between firm size and audit fees ([Cameran and Perotti, 2014](#); [Shan and Troshani, 2016](#); [Premuroso and Bhattacharya, 2008](#); [Hay et al., 2006](#)) and this has been attributed to the inherent complexity and the political visibility of large firms as compared to small firms. Additionally, auditors have to spend more time and effort in performing detailed audit procedures and tests. Thus, our study hypothesizes that:

*H2.* There is a positive relationship between firm size and audit fees.

### 3. Methodology

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, correlation analysis and empirical estimation method.

#### 3.1 Data and sample selection

The sample for this study is selected from a total of 267 bank and non-bank financial institutions in Ghana. The banking industry is made up of 27 universal banks, 137 rural and community banks and 58 non-banking financial institutions including finance houses, savings

and loans, leasing and mortgage firms (PWC, 2014). Insurance companies are made up of 19 life insurance firms and 26 non-life insurance firms (National Insurance Commission [NIC], 2015).

The sample selection covers firms with at least two years application of the local standard: Ghana national accounting standard in Ghana and subsequent post-application of the new standard (IFRS) for at least two years. By this criteria 137 rural and community banks, and 58 non-banking financial institutions including finance houses, savings and loans, leasing and mortgage firms were excluded from the study (these firms are not mandated to comply with IFRS). Further, four universal banks and 17 insurance companies have also been excluded from the study because of unavailable data. In all a total of 216 firms have been excluded from the sample leaving a final sample size of 52 firms made up of both listed and non-listed firms for this study, which entails 24 universal banks and 28 insurance companies. Our study period is from 2003 to 2014 to capture pre and post-adoption periods. This study uses secondary data from annual financial statements of banks and insurance companies selected for the study. The data were extracted from the audited annual financial statements of the selected companies over the study period.

### 3.2 Measurement of estimation variables

In line with Fields *et al.* (2004), Kanagaretnam *et al.* (2010) and Marra *et al.* (2011), we measure dependent variable i.e. fee and the two key variables of study i.e. IFRS and SIZE as follows. *FEE*, which measures audit fees is computed as the natural logarithm of total audit fees paid by auditee. *IFRS* connotes the compliance with IFRS and is measured as a dummy variable with value of 1 for IFRS compliance firm and 0 otherwise. *SIZE* is firm size and is measured as the natural log of the firm's total assets.

Furthermore, in line with empirical studies (Barth *et al.*, 2008; Beatty *et al.*, 2002; Cameran and Perotti, 2014; Kanagaretnam *et al.*, 2010), introduce the following control variables, which may influence audit fees paid by auditee. *EFF* measures efficiency and is computed as ratio of total operating expense to total revenue. *AQ* is audit quality and is measured as dummy variable with a value of 1 if a Big Four audit firm audits the firm, otherwise 0. *ARL* is the audit report lag which is measured as the natural logarithm of the total number of days from the financial statements date to the date of the release of the audit report. *RESERV* is reserve for general banking and insurance risks calculated as total reserve for banking and insurance risks scaled by total assets at the beginning of the year. *LOSS* proxies for profitability risk, which is a categorical variable for firms with negative net income coded as 1 if company suffers loss and 0 otherwise. *LIST* indicate the listing status of the firm, which is a categorical measure captured as 1 for firms listed on the Ghana stock exchange and 0 otherwise. *ROA* is the return on assets and it is measured as net operating income before tax scaled by total assets from previous year. *LOANS* is the gross loan balance scaled by total assets at the beginning of the period. *LEV* is the leverage of the firm and is measured as the ratio of total liabilities to total assets. *PERIOD* is the transition period, which is a categorical measure captured as 1 for transition periods and 0 otherwise. Ghana adopted IFRS in 2007 but began preparation to comply with the standards in 2005 and 2006. Therefore, the transition period of moving from the Ghana accounting standards (GAS) to the IFRS was 2005-2006.

### 3.3 Summary statistics and correlation analysis

Table I presents the descriptive statistics of the dependent and independent variables used for our estimation. We compute the descriptive statistics to include audit fee for entire period, pre-adoption, transition and post-adoption periods for the combined sample. Specifically, it shows the mean and standard deviation of all the variables used in the study,

Variable	Mean	SD	Min	Max
<i>FEE</i> (entire period)	4.8111	0.4655	3.3979	6.7988
<i>FEE</i> (pre-adoption)	4.1518	0.4185	2.9031	4.8591
<i>FEE</i> (transition)	4.1704	0.4233	3.0569	4.8591
<i>FEE</i> (post-adoption)	4.6132	0.5595	1.1595	5.9690
<i>IFRS</i>	0.6138	0.4879	0.0000	1.0000
<i>AQ</i>	0.7886	0.4091	0.0000	1.0000
<i>ARL</i>	1.8191	0.1377	1.3979	2.3820
<i>LEV</i>	0.8701	0.0747	0.0914	0.9969
<i>LOSS</i>	0.0650	0.2471	0.0000	1.0000
<i>LIST</i>	0.3659	0.4827	0.0000	1.0000
<i>RESERV</i>	0.0188	0.0285	-0.0971	0.1923
<i>ROA</i>	0.0331	0.0340	-0.2091	0.1840
<i>SIZE</i>	8.6035	0.5426	7.2341	9.7536
<i>EFF</i>	0.6226	0.5089	0.0009	7.7904
<i>LOANS</i>	0.7374	0.5515	0.0315	7.7286

**Notes:** The dependent variable is *FEE*, which measures audit fee. We compute the descriptive statistics to include entire period, pre-adoption, transition and post-adoption periods audit fee for the combined sample. *IFRS* connotes the compliance with IFRS. *SIZE* proxy the firm's total assets. Efficiency (*EFF*) is total operating expense to total revenue. *AQ* represents audit quality. *ARL* is the audit report lag. *RESERV* is reserve for general banking and insurance risks. *LOSS* proxies for profitability risk. *LIST* indicates the listing status of the firm. *ROA* is the return on assets. *LOANS* is the gross loan balance to total assets. *LEV* is the leverage of the firm

**Table I.**  
Descriptive statistics

as well as the minimum and maximum values over the sample period. The following observations are worth noting. The mean audit fee is 4.8111 with a minimum and maximum score of 3.3979 and 6.7988, respectively, for the entire period. This suggests that on the average, audit fees of the sampled companies increased but there were variations in this variable as indicated by the standard deviation of 0.4655. However, elsewhere, average audit fees were higher than the one reported in this study. For instance, [De George et al. \(2013\)](#) and [Cameran and Perotti \(2014\)](#) reported mean values of 11.43 and 11.0389, respectively. Comparing the mean audit fee of pre-adoption, transition and post-adoption periods, the post-adoption period show 75 per cent higher average audit fee than pre-adoption while the transition period is 11 per cent higher than a pre-adoption mean fee. The post-adoption higher audit fee can be explained by the level of expertise and experience required to audit an IFRS-compliant financial statements. More so, the slightly higher audit fee during the transition period could be explained by the additional audit services required during the preparation toward IFRS adoption.

On average, 61.4 per cent of the sampled firms have adopted IFRS. The average size of sampled companies is 8.6035 while the mean score for leverage is 87.01 per cent but a maximum leverage of about 99.7 per cent suggesting that some companies mainly depend on debt as their main source of funding. Finally, profitability records overall mean of 0.0331 with a minimum value of -0.2091 indicating that the sampled firms are hardly profitable with some actually making losses.

We report our correlation matrix of the dependent and independent variables in [Table II](#). Consistent with prior studies, the correlation between IFRS adoption and audit fees is positive. This suggests that the adoption of IFRS increases audit fees and this may be because of the fact that the adoption of IFRS does indeed increase the complexity of the auditors work, and hence, the increased cost. In addition, we observe a high positive

correlation between firm size and audit fees indicating that larger firms pay more for auditing than smaller firms. Another interesting observation is the relationship between audit quality and audit fees, which suggests that an increase audit quality leads to higher audit fees. This indicates that IFRS adoption increases the quality of audit but for the quality to be achieved, much cost is incurred by the auditors in professional development, hiring, assigning teams and developing auditing guidance to cope with the new standards. These costs become important elements in determining the audit fees, hence the increased audit fees.

3.4 Empirical method

Our discussions in Section 2 conditioned audit fee on *IFRS* and *SIZE*. Taking guidance from this and controlling for other variables as in [Fields et al. \(2004\)](#), we model audit fees as a function of *IFRS* and *SIZE*, as well as relevant control variables. Guided by our hypotheses, our study adapts [Simunic \(1980\)](#) conventional audit fee model by using [equations 1, 2 and 3](#) to test for banks, insurance firms and the financial services industry, respectively, as below:

$$FEE_{it} = \alpha_i + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 EFF_{it} + \beta_4 RESERV_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 LIST_{it} + \beta_8 AQ_{it} + \beta_9 LOSS_{it} + \beta_{10} ARL_{it} + \beta_{11} LOANS_{it} + e_{it} \tag{1}$$

$$FEE_{it} = \alpha_i + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 EFF_{it} + \beta_4 RESERV_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 LIST_{it} + \beta_8 AQ_{it} + \beta_9 LOSS_{it} + \beta_{10} ARL_{it} + e_{it} \tag{2}$$

$$FEE_{it} = \alpha_i + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 EFF_{it} + \beta_4 RESERV_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 LIST_{it} + \beta_8 AQ_{it} + \beta_9 LOSS_{it} + \beta_{10} ARL_{it} + e_{it} \tag{3}$$

where  $\alpha_i$  represents firm fixed effects.

In our estimation of the equations, the assumption of cross-sectional independence of the error terms in the panel regression was highly unrealistic and violated. There could be considerable distortions that can arise when such cross-sectional dependencies are present but not accounted for. Furthermore, the *p*-value for the Hausman tests for all three regression models are statistically significant at standard levels, indicating that the random effects model is inappropriate. Therefore, we execute, as in [equations 1-3](#), the robust fixed effects

Probability	FEE	IFRS	AQ	ARL	LEV	LOSS	LIST	RES	ROA	SIZE	EFF
<i>FEE</i>	1.000										
<i>IFRS</i>	0.646	1.000									
<i>AQ</i>	0.303	2.285	1.000								
<i>ARL</i>	-0.045	0.162	-0.028	1.000							
<i>LEV</i>	-0.078	-0.051	-0.014	0.060	1.000						
<i>LOSS</i>	-0.088	-0.028	0.015	1.107	0.086	1.000					
<i>LIST</i>	0.177	0.030	0.125	-0.329	0.044	-0.200	1.000				
<i>RES</i>	-0.061	-0.205	-0.129	0.024	-0.058	-0.080	0.112	1.000			
<i>ROA</i>	0.254	0.029	0.117	-0.247	0.024	-0.546	0.291	0.171	1.000		
<i>SIZE</i>	0.828	0.685	0.265	-0.073	0.016	-0.148	0.215	-0.025	0.288	1.000	
<i>EFF</i>	-0.050	0.029	-0.154	0.287	0.074	0.395	-0.120	0.067	-0.370	-0.079	1.000

**Table II.**  
Correlation matrix

panel regression by using the “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.

#### 4. Empirical results and analysis

This section presents our results in three parts. The first part analyzes the response of audit fee to IFRS adoption and firm size while controlling for specific variables. The second part analyzes the audit fee response to the transition period when firms were preparing toward adoption. Finally, the third part discusses the robustness checks, which separate the combined industry sample into listed and non-listed firms, as well as segregating the banks into domestic and foreign ownership.

##### 4.1 The audit fee effects of international financial reporting standards adoption and size

We report our regression results in Table III. Column 1 shows the results for banks, Column 2 for insurance firms while Column 3 shows results for the financial services industry (i.e. the combined sample).

In support of our hypothesis IFRS adoption has a positive coefficient with audit fees suggesting that the adoption of IFRS indeed increases the audit fees paid by banks and insurance firms and the industry as a whole. Furthermore, statistically the relationship between the audit fees and IFRS adoption by banks is not significant while that of insurance firms and the industry is significant at standard levels. This may explain the reason why banks pay lower audit fees than their counterparts in the insurance sector. Our finding is consistent with existing literature as several studies have found that IFRS adoption leads to increased audit fees in New Zealand (Griffin *et al.*, 2009), in Finland (Vieru and Schadewitz, 2010), in China (Lin and Yen, 2016) and in Australia (De George *et al.*, 2013). The results are

Variable	1	2	3
<i>IFRS</i>	0.0760 (1.4797)	0.0971 (1.7620)*	0.1338 (3.8145)***
<i>AQ</i>	0.0265 (0.7287)	0.1586 (2.9970)***	0.1598 (3.7443)***
<i>ARL</i>	0.1148 (0.9688)	-0.1449 (-0.4537)	-0.1278 (-0.7659)
<i>EFF</i>	0.0295 (1.2864)	0.0789 (1.5484)	0.0119 (0.5787)
<i>LOANS</i>	-0.1231 (-2.8438)***	-	-
<i>LEV</i>	-0.8527 (-2.6372)***	-0.0217 (-0.3836)	0.0071 (0.1656)
<i>LIST</i>	0.0128 (0.1518)	0.1286 (1.4324)	0.1333 (1.7086)*
<i>LOSS</i>	0.1689 (2.0709)**	0.1126 (2.2241)**	0.1007 (2.2549)**
<i>RESERV</i>	1.1415 (3.1307)***	0.3458 (0.7638)	0.1457 (0.4265)
<i>ROA</i>	0.6400 (0.9862)	0.0678 (0.5585)	-0.0025 (-0.0331)
<i>SIZE</i>	0.6723 (12.9936)***	0.4863 (8.7212)***	0.5020 (13.1170)
$\alpha$	-0.6125 (-1.0036)	0.7878 (1.1106)	0.5531 (1.3744)
<i>F</i> -stats	51.2002***	13.9252***	35.8992***
Adj. $R^2$	0.7302	0.6168	0.7870

**Notes:** The dependent variable is *FEE*, which measures audit fee. *IFRS* connotes the compliance with IFRS. *SIZE* proxy the firm's total assets. Efficiency (*EFF*) is total operating expense to total revenue. *AQ* represents audit quality. *ARL* is the audit report lag. *RESERV* is reserve for general banking and insurance risks. *LOSS* proxies for profitability risk. *LIST* indicates the listing status of the firm. *ROA* is the return on assets. *LOANS* is the gross loan balance to total assets. *LEV* is the leverage of the firm; \*\*\*, \*\* and \* indicate statistical significance at the 1 per cent, 5 per cent and 10 per cent level, respectively, and *t*-ratios are reported in parentheses. Columns 1, 2 and 3 represent banks, insurance firms and combined sample, respectively

**Table III.**  
The audit fee effects  
of IFRS adoption and  
firm size  
respectively

consistent with the idea that *IFRS* adoption increases auditor efforts with respect to time and complex nature of some aspect of the standards. Again, as expected, the coefficient of *SIZE* is positively and significantly related to audit fees for banks, insurance firms and the financial services industry. This indicates that the size of the auditee as measured by total assets plays an important role in determining the audit fees charge by auditors in the financial services industry. The size effect on audit fees could be explained by the greater effort required by the auditor in auditing larger financial firms due to their complexity and scope of their activities, and therefore, may require more time and skill.

Turning to the control variables, the coefficients of audit quality is positively related to audit fees and this relationship is statistically significant for insurance firms and the financial industry as a whole. This is an indication that the Big Four audit firms charge premium for their services. *ARL* and operating *EFF* do not show any significant relationship with audit fees and the coefficients are not statistically different from zero. This *ARL* result could explain why audit firms in Ghana charge not according to the time spent on the audit assignment but rather on other factors. The proportion of revenue as an operating expense is again not a determining factor for audit fees charged by auditors at least in the financial services industry. The proportion of gross loans to total assets (*LOANS*) is negatively and significantly related to audit fees in the banking sector. *LEV* is negatively related to audit fees in both the banks and insurance firms and not significantly different from zero for the entire financial services industry. The results show that low levels of loans to total assets in the banks and low levels of gearing in the financial services industry attract lower audit fees as this may indicate low level of financial risks. Nonetheless, this could also mean that highly leveraged firms will negotiate for lower audit fees probably to meet their obligations such as the interest payment and the repayment of maturing principal amounts. *LIST* displays positive but weak relationship with audit fees with the possibility that the relationship between the listing status of a firm and audit fees paid is partially captured by size and complexity of audit assignment. *LOSS*, which is a proxy for profitability as measured by net income has positive and significant relationship with audit fees paid by firms in the financial services industry. The results show that firms that report negative income (i.e. loss) attract high audit fees as compared to their profit-making counterparts. *RESERV*, which measures the proportion of reserve to total assets has a positive relationship with audit fees for banks, insurance firms and the entire industry, however, that of banks is statistically significant indicating that reserve is important for managing bank risks as banks are expected to keep a regulated reserve balance to mitigate liquidity risk.

Finally, the audit fee models have a good fit for the empirical data with an adjusted  $R^2$  of 73 per cent for banks, 62 per cent for insurance companies and the overall industry figure of 79 per cent indicating that most of the variations in audit fees are explained by the regressors. The *F*-statistic for the audit fee model for the banks, insurance companies and the overall industry are statistically significant at 1 per cent level indicating the joint significance of the independent variables for the dependent variable.

#### 4.2 Does preparation toward international financial reporting standards adoption during transition period affect audit fee?

This section focuses on the fees charged by auditors during the transition period toward this major accounting change from local *GAAP* (i.e. *GAS*) to *IFRS*. We test the combined sample (i.e. financial services industry) and present our results in [Table IV](#) Column 1 to include *IFRS* transition period as:

**Table IV.**  
IFRS Transition  
period with  
robustness checks

Variables	1	2	3	4	5
<i>IFRS</i>	0.1140 (2.5188)**	0.1047 (1.4626)	0.1031 (1.9468)*	0.1108 (2.7739)***	-0.0999 (-0.8944)
<i>SIZE</i>	0.5217 (11.7510)***	0.5474 (7.8503)***	0.5480 (11.7114)***	0.6364 (12.4514)***	0.8615 (8.0256)***
<i>EFF</i>	-0.0002 (-0.0098)	-0.1783 (-1.1957)	0.0110 (0.5493)	-0.0057 (-0.2279)	0.3731 (1.6044)
<i>RESERV</i>	0.0934 (0.4610)	-0.9895 (-1.8364)*	0.2454 (1.1484)	2.0363 (4.3213)***	1.2995 (2.2747)**
<i>ROA</i>	0.0402 (0.6535)	0.0046 (0.0138)	0.0113 (0.1692)	-1.0234 (-1.2079)	1.5940 (1.0594)
<i>LEV</i>	0.0052 (0.2103)	-0.2403 (-1.9653)	0.0007 (0.0262)	-1.0522 (-2.9230)***	-0.4406 (-1.0825)
<i>LIST</i>	0.0775 (1.1437)	-	-	0.1044 (1.1852)	-0.2515 (-1.1167)
<i>AQ</i>	0.1132 (2.8362)***	0.0561 (0.9052)	0.1090 (2.1636)**	0.0268 (0.7545)	0.1992 (0.9408)
<i>LOSS</i>	0.0578 (1.2983)	-0.1018 (-1.1393)	0.0566 (1.1791)	0.2337 (1.6640)	-0.0252 (-0.2116)
<i>ARL</i>	-0.0655 (-0.6873)	0.2885 (1.5202)	-0.1454 (-1.3616)	0.2462 (2.0305)**	0.0834 (0.3739)
<i>PERIOD</i>	-0.0659 (-1.4985)	-	-	-	-
<i>LOANS</i>				-0.1123 (-1.5966)	-0.1751 (-2.3552)**
$\alpha$	0.3532 (0.8895)		0.3373 (0.8130)	-0.5188 (-0.8510)	-2.6856 (-2.4516)**
Adjusted $R^2$	0.8118	0.7652	0.7974	0.9310	0.7317
F-stats	(36.4903)***	(21.7912)***	(31.1270)***	(64.8979)***	(12.9332)***

**Notes:** The dependent variable is *FEF*, which measures audit fee. *IFRS* denotes the compliance with IFRS. *SIZE* proxy the firm's total assets. Efficiency (*EFF*) is total operating expense to total revenue. *AQ* represents audit quality. *ARL* is the audit report lag. *RESERV* is reserve for general banking and insurance risks. *LOSS* proxies for profitability risk. *LIST* indicates the listing status of the firm. *ROA* is the return on assets. *LOANS* is the gross loan balance to total assets. *LEV* is the leverage of the firm. *PERIOD* is the transition period; \*\*\*, \*\* and \* indicate statistical significance at the 1 per cent, 5 per cent and 10 per cent level, respectively, and *t*-ratios are reported in parentheses. Column 1 is IFRS transition period, Column 2 is listed firm, Column 3 is non-listed firms, Column 4 is domestic banks and Column 5 is foreign banks

$$\begin{aligned}
FEE_{it} = & \alpha_i + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 EFF_{it} + \beta_4 RESERV_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} \\
& + \beta_7 LIST_{it} + \beta_8 AQ_{it} + \beta_9 LOSS_{it} + \beta_{10} ARL_{it} + \beta_{11} PERIOD_{it} + e_{it} \quad (4)
\end{aligned}$$

It is expected that transition to a major accounting change from local *GAAP* to IFRS will add extra audit risk and work to audit services, and therefore, lead into a higher audit fees paid to auditors. In the contrary, our result shows a weak negative relationship between the transition variable and audit fees. It means that audit fees paid to auditors during the transition period was comparatively less. This could mean that audit firms were charging low audit fees to gain consulting (non-audit) work, which was required during the transition period in the form of training. In other words, transition costs are largely non-audit rather than audit reflecting basically IFRS start-up and learning costs. Thus, it is highly likely that there was an extensive supply of non-audit services in the forms of training and consultancy during the transition from GAS to IFRS. This will be a focus of our future study, to examine the relationship between IFRS adoption and non-audit fees during the transition period. The results are largely unchanged when compared to our baseline regression results for the industry in [Table IV](#) with the exception of a weak change in sign of the coefficients of *EFF* and *ROA* column. However, *SIZE* turned significant during the transition period, meaning that auditors attached importance to the complexity and time consumption in preparing a bigger company toward compliance.

This finding has two significant implications for audit firms. First, owing to an extensive adoption of international reporting standards, auditors are required to evaluate how the transition from local *GAAP* to *IFRS* affects the pricing of their audit services. Second, this finding contributes to the auditor's evaluation of the complexity and time-demand of the preparation during *IFRS* transition.

#### 4.3 Robustness checks

In this section, we present robustness checks for our results in two parts. First, we separate the combined industry sample into listed and non-listed firms and test whether the audit fee is more significant in either or in both categories of firms. It is expected that, as listed firms are more capitalized than their non-listed counterparts audit work involved may also be sophisticated leading to a higher audit fee. As we reported in [Table IV](#) Columns 2 and 3, the relationship between audit fee and IFRS shows positive coefficient for both firm categories with slight difference. However, the coefficient for non-listed firms have a weak significance at 10 per cent level. This result could mean that as listed firms were mandated to comply with IFRS in 2007, they put in much effort during the transition period in terms of preparation toward adoption, and therefore, gives them an advantage in terms of significance of fee paid by the listed firms. The coefficient of *SIZE* is positively and significantly related to audit fee for both listed and non-listed firms. This indicates that the size of the auditee as measured by total assets plays an important role in determining the audit fee regardless of listing status. This can be explained by the fact that most big firms in Ghana are not listed on the stock exchange, and therefore, auditors do not consider listing status to mean large and complex. *EFF*, *RESERV*, *LEV* and *LOSS* for listed firms all show a negative relationship with audit fee while their counterparts for listed firms are positive. This indicates that audit fee decreases in relation to these variables for listed firms while their presence increases audit fee for non-listed firms.

Second, we segregate our bank sample into foreign-owned banks and domestic owned banks to test whether international banks operating in Ghana have higher audit fees than domestic banks. It is expected that foreign banks adhere more to IFRS compliance as

compare to their locally owned counterparts, which may have significant effect on audit fees paid to auditors. Contrary to our expectation as in Columns 4 and 5 of [Table IV](#), foreign banks pay less in audit fees as compare to domestic banks, which pay significantly high audit fees. Intuitively, this is possible as IFRS enhances the quality of financial reporting, so expected expense could minimize because of lower inherent risk associated with the audit ([Cameran and Perotti, 2014](#); [Kim et al., 2012](#)). On the contrary, less compliant means that audit firm has to spend time and effort to identify risk and allow for adjustments of accounts to conform to IFRS and this comes with extra cost to the auditee. The coefficient of *SIZE* is positively and significantly related to audit fee for both domestic and foreign banks. This indicates that the size of the auditee plays an important role in determining the audit fee regardless of ownership structure. The *EFF*, *ROA*, *LEV* and *LOANS* are negatively related to audit fee while *RESERV*, *LIST*, *AQ*, *LOSS* and *ARL* have positive coefficients' for domestic banks. Furthermore, for foreign banks, *LEV*, *LIST*, *LOSS* and *LOANS* all show negative association with audit fee while *EFF*, *RESERV*, *ROA*, *AQ* and *ARL* show positive coefficients. The variables with negative coefficients indicate a reduction in audit fee charges while the positive coefficients signify an increase in audit fees.

## 5. Conclusion

In this study, we investigate the effects of IFRS adoption and firm size on auditors' fees determination in the Ghanaian financial industry. We argue that the adoption of IFRS has an incremental effect on audit fees resulting from the greater effort for auditors in performing audit. We extend prior studies on the effect of IFRS adoption on audit fees by concentrating on the financial services industry in a new context of a developing country where this research is uncharted. We further argue that firm size which sometimes also determines the complexity of the audit assignment affects auditors' fees determination.

We obtained our data from a sample of 52 listed and non-listed firms spanning from 2003 to 2014. Guided by our hypotheses, we conditioned audit fees on IFRS adoption and *SIZE* and execute the robust fixed-effects panel regression.

Our results show that IFRS adoption has a positive coefficient with audit fees suggesting that the adoption of IFRS indeed increases the audit fees paid by the industry as a whole. Our finding is in line with the findings reported in the practitioner journal and consistent with existing academic literature as several studies have found that IFRS adoption leads to increased audit fees in New Zealand ([Griffin et al., 2009](#)), in Finland ([Vieru and Schadewitz, 2010](#)), in China ([Lin and Yen, 2016](#)) and in Australia ([De George et al., 2013](#)). The results are consistent with the idea that IFRS adoption increases auditor efforts with respect to time and complex nature of some aspect of the standards. Again, as expected, the coefficient of *SIZE* is positively and significantly related to audit fees. This indicates that the size of the auditee plays a vital role in determining the audit fees charge by auditors. The results of our study extend the literature on the cost side of IFRS adoption by investigating the financial services industry and non-listed firms in a new context i.e. a developing country where this research is uncharted. The existing studies based their analysis on either cross-section or pooled analysis and shorter post-adoption period ([Cameran and Perotti, 2014](#)). However, using an extended post-adoption period of seven years data, we base our study on analytical panel model, which directly examines the cost side of IFRS adoption with size as joint key explanatory variables with emphasis on financial institutions and their auditors.

This study is significant to practitioners as it demonstrates the importance of what goes into the determination of the auditors' fees. It helps auditors to apply the relevant charging

formula when determining audit fees and helping managers to improve upon the variables that raise their audit bill and forecasting their audit expenditure.

Our study is limited by industry (i.e. the financial services industry) and geography (i.e. Ghana). We propose further research that will widely consider other sectors and countries to improve the current scanty literature in this area.

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