

The effects of IFRS adoption and Big 4 audit firms on audit and non-audit fees: Evidence from Ghana

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Abstract: The study was conducted to examine the effect of IFRS adoption on audit and non-audit fee and also the relationship between the big4 audit firm and audit and non-audit fees. Using a sample of financial and non-financial firms in Ghana, the results show that IFRS adoption has a positive and significant relationship with audit and non-audit fees post IFRS adoption. The results further revealed that there is positive association between the year of IFRS adoption (transition period) and audit and non-audit fees. On the big4 audit firms, the results show that the big4 charge higher audit and non-audit fees than non-big4 as there was a positive and significant relationship between Big4 and audit and non-audit fees. The results support the argument that the adoption of IFRS increased the complexities of financial reporting and audit risk resulting in a higher audit and non-audit fees charged during the transition period and post IFRS adoption. The paper extends previous studies on the subject matter by including the year of IFRS adoption and non-audit fees within the context of a developing economy with weak financial regulatory regime.

Keywords: International Financial Reporting Standards, Audit fees, Non-audit fees, Big4, Ghana National Accounting Standards

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1. Introduction

Prior to the adoption of IFRS for financial reporting by public entities in Ghana, companies were using the Ghana National Accounting Standards which was issued by the Institute of Chartered Accountants – Ghana (ICAG). Osei-Afoakwa and Asare (2013) the institute was expected to ensure that Ghana's Accounting Standards were in harmony with International Accounting Standards (IAS). Unfortunately, the ICAG did not have the legal mandate to enforce compliance with its directives as there was no legal basis for its operations (Osei-Afoakwa & Asare, 2013). Rahman (2004) noted that even though these standards were supposed to be in harmony with IAS, they were never reviewed and this compelled most practitioners who got confused by the inconsistencies in the standards and the lack of guidelines to abandon them. In 2004, a report by the World Bank and the International Monetary Fund (IMF) titled Report on the Observance of Standards and Codes (ROSC) listed a number of weaknesses in the financial reporting framework of Ghana and stated that the ICAG lacked the capacity to function properly as an effective professional accounting body. A number of recommendations were made which included legal reforms as well as regulatory and structural reforms including adopting or converging with IFRS/IAS.

Ghana adopted IFRS for listed firms, government businesses, banks, insurance companies, security brokerage firms, pension funds and public utility companies in 2007 based on the recommendations of the ROSC report in 2004. The date for full compliance was set a year later even though some companies had complied by the end of 2007. The ROSC report (2004) revealed that the GNAS had significant weaknesses in regulation, compliance and enforcement of standards. This placed doubts on the quality of accounting information prepared in accordance with the GNAS. Assenso-Okofu *et al.* (2011) reviewed the development of accounting and reporting in Ghana and reported that IFRS adoption improved earnings quality and analyst forecast. Most importantly, previous studies on disclosure requirements under the GNAS standards reported that disclosure was generally low (Aboagye-Otchere *et al.*, 2012; Assenso-Okofu *et al.*, 2011; Bokpin, 2013; Tsamenyi *et al.*, 2007). The ROSC report argued that the country must improve on its financial reporting regulatory systems and framework and to that effect recommended that the country should fully adopt IFRS and the IFRS for SMEs when they are available without any attempt to modify them. Osei-Afoakwa and Asare (2013) argue that there was a significant gap between the GNAS and the IFRS/IAS which compelled the country to fully adopt IFRS instead of issuing its own standards in harmony with IFRS/IAS.

Researchers have argued that the adoption of IFRS for listed and non-listed firms globally is the most significant regulatory change in the history of the accounting profession in most countries (Klibi & Klibi, 2016; Camaran & Perrotti, 2014;

Nulla, 2013; Daske *et al.*, 2008). The results of this major regulatory change on audit and its related cost such as audit and non-audit fees has gained the attention of researchers, practitioners and other stakeholders (Loyeung *et al.*, 2016; Choi & Yoon, 2014; Kim *et al.* 2013; Mudawaki, 2012; Choi *et al.*, 2010). The perceived benefits of instituting a single set of global accounting standards are: potential improvements in the quality of reported information to stakeholders as well as convergence benefits such as greater ease of comparing financial statements of companies across countries; increased ability to secure cross-border listing, better management of global operations and decreased cost of capital (De George *et al.*, 2013; Naoum *et al.* 2011). However, these benefits must be contrasted with the potential cost of mandatory adoption of IFRS. Vieru and Schadewitz (2010) argue that auditors view the complexity of the IFRS transition and the client's potential insufficient preparations as issues that increase the uncertainties and risks in their audit assignments. For example, Hoogendoorn (2006) further notes that companies have underestimated the complexities, effects and costs of IFRS (see also Jermakowicz & Gornik-Tomaszewski, 2006).

Auditing activity is a critical aspect of switching to the application of new accounting standards, and audit fees represent a part of the related implementation costs (Loukil, 2016; Cameran & Perroti, 2014). The mandatory adoption of IFRS has two opposing effects on audit fees: on the one hand, greater effort is required from auditors, which is likely to be reflected by higher fees; on the other hand, if IFRS improve the quality of financial reporting, expected liability costs could decrease, and lower fees may be demanded (de Feuntes & Sierra-Grau, 2015; Choi *et al.* 2010; Cameran & Perroti, 2014).

The effect of the adoption of IFRS on fees paid to auditors is at the Centre of a debate among practitioners. Cameran and Perroti (2014) documents that only a few academic works are concerned with the change in audit fees after IFRS adoption. Griffin *et al.* (2009) find an audit fee increase associated with the adoption of IFRS and the concurrent introduction of new corporate governance rules in New Zealand. Loukil (2016) found evidence of increased audit fees in the year of adoption using French companies but found no significant increase in audit fees post-adoption period. Vieru and Schadewitz (2010) examined fee determination in the transition year to the IFRS for small and medium-sized Finnish companies. Lin and Yen (2016) study on Chinese firms found that auditors with IFRS experience charged significantly higher fees in the initial years of adoption. The results of the study generally revealed an increase in fees after IFRS adoption. The sample of all the analyses is limited to developed and emerging economies even though countries like Kenya adopted IAS/IFRS in 1998. The studies in Africa on IFRS has focused on adoption and implementation and compliance with IFRS (Osei-Afoakwa & Asare, 2013; Madawaki, 2012; Atsunyo *et al.* 2017) and the impact of IFRS adoption on reporting quality (Ames, 2013; Assenso-Okoko *et al.* 2011; Klibi & Klibi, 2016). Majority of these studies have also focused on only audit fees but it

is argued that the cost of the transition should also be looked at within the context of consultancy fees companies will have to incur in order to change from the local GAAP to IFRS. Moreover, a lot of work is expected to be done by way of consultancy and audit in the year of adoption like reinstatement of previous years' financial statement in compliance with IFRS which could translate into higher audit and non-audit fees

It is obvious from the forgoing arguments that evidence of the impact of IFRS adoption on audit and non-audit fees has focused on western economies particularly the developed countries with little on Africa and for that matter Ghana. Ghana was the first country in West Africa to adopt IFRS after other Africa countries in Eastern and Southern Africa had adopted it. It is argued, that the institutional environment in which a firm operates to a large extent influence the impact of the mandatory IFRS adoption on audit and non-audit fees (Wang *et al.*, 2008; Taylor and Simon, 1999). Ghana is said to have a weak financial regulatory regime (World Bank & IMF, 2004). Thus, in order to better understand audit and non-audit fee formation during IFRS transition, more insight is needed to assess whether the complexity of the transition coincides with audit and non-audit fees in the African context. Furthermore, the magnitude of the impact of IFRS adoption on audit and non-audit fees will depend largely on the difference between the local GAAP and IFRS. This study therefore addresses the knowledge gap in the literature and explores the effect of the mandatory IFRS adoption in Ghana and its association with audit and non-audit fees.

The study makes significant contribution to literature and policy. The study goes beyond current research on IFRS and audit fees by introducing variables such as the year of IFRS year of adoption, and non-audit fees into the research. These variables have received little attention in literature even in developed economies. The study is relevant because it responds to the limited literature on IFRS and audit and non-audit fees and its implication in Sub-Saharan Africa especially for countries who are considering adopting IFRS. The results have significant implications for other African countries that have not adopted IFRS yet but have plans to adopt it in the near future.

2. Literature review

2.1 Adoption of IFRS in Ghana and Africa

Adoption of IFRS in Africa started in the late 1990s with countries such as Uganda and Kenya adopting it in 1998 and 1999 respectively (Atsunyo *et al.*, 2017). This was followed by Malawi and Mauritius in 2001, Botswana in 2003, Tanzania in 2004, South Africa in 2005, Ghana in 2007, Rwanda and Zambia in 2008, Sierra Leone in 2009, Algeria and Mozambique in 2010, and finally Swaziland and

Nigeria in 2012. What is common among the African countries that have adopted IFRS is that 10 out of the 16 countries are in Southern Africa with only Ghana, Sierra Leone and Nigeria in West Africa. Algeria and Mozambique adopted IFRS with modifications to suit local content but the rest of the African countries including Ghana fully adopted IFRS as published by the International Accounting Standard Board (IASB). Nigeria delayed in adopting IFRS because the Nigerian Accounting Standards Board unlike Ghana had the legal authority, the financial support and the structural integrity to issue accounting standards and enforce same (Osei-Afoakwa & Asare, 2013).

Ghana's adoption of IFRS in 2007 was spearheaded by weaknesses in the local GAAP (ROSC, 2004) and lack of confidence by practitioners in Ghana (Rahman, 2004). Atsunyo *et al.* (2017) posited that the Institute of Chartered Accountants Ghana realised that there was a significant gap between the GNAS and International Accounting Standards and therefore decided to migrate to IFRS. The study further argued that the adoption of IFRS by Ghana in 2007 was also informed by the unprecedented inflow of Foreign Direct Investment (FDI) into West Africa and the increasing need for companies to raise foreign capital through the Stock Exchange. Ghana subsequently adopted IFRS for Small and Medium Scale Enterprises (SMEs) in 2009 even though effective implementation was delayed till 2012 (Aboagye-Otchere & Agbeibor, 2012). Osei-Afoakwa and Asare (2013) argues that Ghana's decision to adopt IFRS was a hasty decision born out of desperation as a result of the inability of the ICAG to provide credible reporting standards for use in Ghana.

It is important to add that despite the adoption of IFRS by some African countries, studies have not examined the effect on audit and non-audit fees which can guide other countries yet to adopt.

Ghana plays a critical role in the West African Sub-region in terms of financial accounting practices through the Association of Accountancy Bodies in West African (ABWA) where it is a founding member. Ghana has been assisting and continues to assist Anglophone countries in the sub-region on Accounting practice and regulations. Currently, ICAG professional Exams are written in Liberia. Other countries such as The Gambia and parts of Cameroun get assistance from the ICAG to develop and enhance financial reporting practices. The Anglophone countries in West Africa follow France domestic guideline in financial reporting and as such have not adopted IFRS yet.

2.2 Empirical review

Several studies have examined the impact of IFRS adoption on audit fees and to some extent on non-audit fees in different jurisdictions. Majority of the results shows a positive relationship between IFRS adoption and audit fees even in

developed economies where there exist an efficient Professional Accounting regulatory body. The results are usually attributed to differences in the gap between local GAAP and IFRS in these jurisdictions as well as weaknesses in financial reporting regulations which require more effort during adoption and post-adoption of IFRS. For instance, Houque (2017) examined the effect of IFRS adoption on New Zealand firms. The study based on a sample of 141 firms found evidence to support the hypothesis that IFRS adoption has a positive effect on audit fees.

Chen and Khurana (2017) examined the impact of IFRS versus US GAAP on audit fees and going concern opinion using a sample of US foreign firms. The results of the study revealed that on average foreign IFRS firms pay more audit fees than foreign US GAAP firms. The study argues that the rigidities in IFRS as well as the judgments that preparers of financial statements exercise increase audit risk, hence higher audit fees is charged. Higgins *et al.* (2016) extended previous studies on the impact of IFRS adoption to include increases in audit fees during IFRS adoption and post-IFRS adoption and whether the increases are consistent in the post-adoption period. The results of the study revealed that post-IFRS adoption increase in audit fees is consistent and not driven by short term transitional cost. The results also showed that PwC and Deloitte experienced lower (higher) marginal pricing post- IFRS adoption meaning that they have relatively higher (lower) fixed cost and higher (lower) variable cost structure. Shan and Troshani (2016) examined the impact of mandatory eXtensible Business Reporting Language (XBRL) and IFRS adoption on audit fees using listed firms on the Shanghai Stock Exchange. The results showed that IFRS increased audit fees for all the companies sampled while XBRL was negatively associated with audit fees.

Loukil (2016) studied the impact of IFRS adoption on audit fees using a sample of large French listed companies. The results of the study showed that audit fees increased during the transition period but were not significant during the post-adoption period contrary to the findings of Higgins *et al.* (2016). De Fuentes and Sierra-Grau (2015) examined the impact of IFRS adoption on audit and non-audit fees using a sample of listed firms in Spain. The study revealed an unexpected higher audit fees associated with group accounts for the firms three consecutive years of adoption. The study revealed that the behaviour of non-audit fees was more erratic compared to the audit fees during the same period. Camaran and Perotti (2014) examined the effect of IFRS adoption on audit fees using a sample of Italian banks. The results show that the real audit cost of these banks increased by 19.29% after the adoption of IFRS. The study also revealed that the increase in audit fees is associated with the presence of financial derivatives held for hedging purposes. The study however did not find any effect of IFRS on financial reporting quality.

Choi and Yoon (2014) studied the effect of IFRS adoption, the big N factor, and IFRS-related consultancy services on auditors and audit fees using firms from Korea. The results of the study showed that for Korean firms that are audited by the big N, there is a positive relationship between IFRS adoption and audit fees. The results also showed that IFRS-related consultancy service provided by auditors have a negative association with IFRS adoption. The study concluded that provision of consultancy service by auditor increase auditors' knowledge of the client which mitigates audit costs. De George *et al.* (2012) examined the cost of IFRS in the transition period using sampled firms from Australia. The study reported that the mean cost of IFRS adoption in the transition period increased by 23% beyond the normal yearly increase. The study also showed that firms that have a higher exposure to audit complexity have a greater cost of compliance in the transition period.

Yaacob and Che-Ahmad (2012) examined the impact of IFRS on audit fees after the adoption by Malaysian listed companies. The results of the study showed that there is a significant positive association between IFRS adoption and audit fees. Griffen *et al.* (2009) examined the relationship between overseas and New Zealand governance regulatory reforms on audit and non-audit fees. The study used IFRS indicator variables to relate the timing of the fee changes to the incidence of the overseas and New Zealand reforms. The results of the study showed an increase in audit fees after the adoption of IFRS by New Zealand firms. The study also reported a decrease in non-audit fees which could not be linked with the adoption of IFRS.

Kim *et al.* (2012) examined the effect of mandatory IFRS adoption on audit fees using a sample of firms within the European Union. The results of the study showed that the mandatory adoption of IFRS within the European Union increased audit fees. The result also showed that audit premium increased with increase in audit complexities as a result of IFRS adoption and reduces the quality of financial reporting. The results further showed that IFRS related premium fees are lower in countries with strong legal regimes. Risheh *et al.* (2014) studied the effect of IFRS adoption on audit fees using listed Jordanian firms. The results from a sample of 1274 Jordanian listed firms revealed a positive and significant association between IFRS adoption and audit fees. The study also reported a positive association between international audit firms and audit fees.

Redmayne and Laswad (2013) examined the impact of IFRS adoption on public sector audit fees and audit effort using sample firms from New Zealand. The results of the study showed a significant increase in audit fees and audit effort in the first year of IFRS adoption. With regards to sectors with the most increase in audit fees and audit effort, the study revealed that local authorities and energy sector had the most significant increase. Schadewitz and Vieru (2009) examine the fees paid to statutory auditors of the small and medium sized companies that are in the stage of

using IFRS for the first time in Finland. They used the magnitude of IFRS adjustments on income before tax, net income, equity and total liabilities as the proxy of the complexity of IFRS transition. They find a positive relation between the complexity proxy and the pricing of auditing services which suggest that audit fees are related to the degree of IFRS adjustments. Hart *et al.* (2009) found that prior to the adoption of IFRS in New Zealand and in the year of the adoption, audit fees increased by 48%. Lim *et al.* (2009) examined the practical challenges in the adoption of IFRS through a survey of auditors, auditees and other important users of accounting information and found a 30% increase in audit time, audit risk and audit fees after the adoption of IFRS.

The overall conclusion from previous studies in different jurisdiction is that IFRS adoption increases audit fees. However, very few studies examined the effect of IFRS adoption on non-audit fees. Also, these studies have not examined the subject matter within an African context even though some African countries adopted IFRS even before the compulsory adoption by the European Union in 2004/2005. This study is conducted to address these discrepancies in literature by examining the effect of IFRS adoption of both audit and non-audit fees within an African context and a developing country for that matter.

3. Hypothesis development

3.1 IFRS adoption and audit fees

Prior studies document that the most important factors that affect audit premium and hence audit costs are litigation risk, audit risk and the complexity of audit assignment (Chen & Khurana, 2017; Musah, 2017; Khaled *et al.* 2014; Redmayne & Laswad, 2013; Schelleman & Knechel, 2010; Diehl, 2010; Hay *et al.* 2006). Extant literature document that the adoption of IFRS will increase the additional effort to become knowledgeable about the new standards to allow them evaluate if the firms have duly complied with the reporting standards which will add up to the audit cost (De George *et al.* 2013; Kim *et al.* 2012). Previous studies have even found evidence that IFRS financial statement prepared after first time adoption is about 60% longer than the financial statements in the pre-adoption period (Webb, 2006; Ernst and Young, 2005). Johnson (2009) reports that IFRS adoption and its transition costs ranges between 0.1 to 0.7 percent of annual revenue. Other studies have reports that the mandatory shift from local GAAP to IFRS increases audit risk at the time of the mandatory shift (Charles *et al.* 2010; Ghosh & Pawlewicz, 2009). Several other studies in Europe reports that IFRS adoption by the European Union increased the burden on private companies and the complexities in financial reporting and auditing leading to a higher audit cost (Hung & Subramanyam, 2007; Hoogendoorn, 2006; Jermakowicz & Gornik-Tomaszewski, 2006).

Based on the above review, the study posits that auditing firms will charge higher audit fees to compensate the increased litigation risk, efforts and audit cost after the adoption of IFRS in Ghana especially as it was established that the GNAS was of low quality and suffered various weaknesses. As a result, the study expect that more audit fees are required to compensate the higher level of litigation risk and the more auditing complexities after the IFRS adoption in Ghana. The study therefore hypothesis that:

H1: IFRS adoption is positively and significantly associated with audit fees in Ghana.

3.2 IFRS adoption and non-audit fees

According to Choi and Yoon (2014) audit firms the world over provide both audit and other non-audit or consultancy services to companies and their clients. The study argues that non-audit services include such themes as accounting assistance, accounting compilation, ad hoc accounting advice, due diligence, and tax consulting. The decision to engage the service of audit firms in non-audit roles is a decision that rest with management of the respective organizations. Some researchers have argued that the provision of non-audit services by auditors will affect their independence as there could be some potential self-review threats (Hay *et al.* 2006; Levitt, 2000).

As auditors are likely to prefer non-audit duties that could generate higher profitability than audit duties could, the loss leader phenomenon can occur in the audit services (Choi & Yoon, 2014; Shin & Kim, 2010). Sharma and Sidhu (2001), however, concluded that large non-audit fees to total fees undermine auditor independence when auditors have a tendency to not issue a going concern qualification to clients. Prior research has usually found a positive relationship between IFRS adoption and audit and non-audit fees whiles others did find significant association between IFRS adoption and non-audit fees. For instance, Choi and Yoon (2014) and Naoum *et al.* (2011) have all documented a positive relation between audit and non-audit fees, while no relationship is found by Griffen *et al.* (2009) and O'Keefe, *et al.* (1994). Whisenant *et al.* (2003) and Geiger and Rama (2003) also provide evidence of a positive relationship between IFRS adoption and audit and non-audit fees in a single-equation estimates. However, the relationship between the variables is not evident when simultaneous-equation analysis is employed, suggesting that audit fees and non-audit fees are jointly determined. Antle *et al.* (2006) extended the analysis to include abnormal accruals as suggested by Frankel *et al.* (2002) since the strength of the economic bond between auditors and their clients is believed to be positively associated abnormal accruals.

In practice, auditors are usually the most natural IFRS advisors and consultants for a company (Jermakowicz & Gornik-Tomaszewski, 2006). Indeed, in many annual reports it is explicitly written, among other things that part of the non-audit fees is related to IFRS transition consultation (Choi and Yoon, 2014). Research has shown that a lower audit qualification or modification incidence is associated with non-audit fees (Firth, 2002). Also, the lack of competition in the IFRS transition market for non-audit services can result in a positive relationship between audit and non-audit fees (Solomon, 1990). If there are only few IFRS specialists available, and the common understanding within companies about the IFRS transition requirements is poor (Jermakowitz & Gornik-Tomaszewski, 2006), it is tempting to charge extra fees from the clients. Accordingly, the following hypothesis is developed.

H2: IFRS adoption is positively and significantly associated with non-audit fees in Ghana

3.3 Auditor type and audit fees

Previous studies have argued that auditing firms charge differently for same or similar jobs depending on the level of audit quality (Choi & Yoon, 2014; Redmayne & Laswad, 2013). Lin and Yin (2009) argued that audit quality is enhanced by externally-connected audit firms as they get to share experiences and skills acquired in other jurisdictions. Based on the expectation that members of international accounting firms are capable of providing better auditing service than other local Ghanaian audit firms, the study expect higher incremental audit fees will be charged by member firms during the implementation. Previous studies in other jurisdiction have found a positive relationship between externally-connected audit firms (herein referred as Big4) (Campa, 2013; Choi & Yoon, 2014; Redmayne & Laswad, 2013; Choi *et al.*, 2008). Positive effect of auditor type on audit fees was reported for firms that have not adopted IFRS in Ghana based on a study of Microfinance companies in Ghana (Yalley *et al.*, 2013). Also Musah (2017) study on determinants of audit fees in Ghana using a sample of listed non-financial firms in Ghana reported a positive relationship between auditor type and audit fees. Very few studies have examined auditor type and non-audit fees. Choi and Yoon (2014) study reported a positive association between internationally-connected audit firms and non-audit fees. Based on these findings the following hypothesis can be deduced.

H3: Big four audit firms are associated with higher audit fees and non-audit fees.

4. Methodology

The study is based on firms sampled in Ghana. The study used sample firms in Ghana because Ghana was the first West African country to adopt IFRS in 2007

before Sierra Leone and Nigeria did same in 2012. Ghana is the second largest economy in West Africa and has a lot of influence in the sub-region because of its history as the first independent country and the beacon of democracy in Africa. Also, previous reviews by the World Bank and IMF as well as previous studies all agree that Ghana had a very weak accounting standards and regulatory environment and structures prior to the adoption of IFRS (Osei-Afoakwa & Asare, 2013; Atsunyo *et al.*, 2017; Assenso-Okofu *et al.*, 2011). Ghana joined the International Federation of Accountants (IFAC) in 2005 and was advised to adopt IFRS as its local standards were not up to international standards.

The study did not include Nigeria and Sierra Leon who are the other two countries to adopt IFRS and are Anglophone countries in the sub-region because of currency differences which makes it impossible to convert at a common currency. Previous studies on IFRS adoption and audit fees have focused on only audit fees to the neglect of non-audit fees. In developing countries like Ghana where accounting practice were low at the time of adoption, more effort is needed in terms of preparing and even transition costs. To perfectly capture the full effect of transition costs of IFRS adoption, the study include non-audit fees as well as the year of adoption (IFRSYR) into the model.

Also, in an attempt to increase sample size as the number of listed non-financial firms in Ghana are few, the study extended the sample to included banks and insurance companies who were all mandated to adopt IFRS. This resulted in the dropping of control variables that are unique to manufacturing and trading firms like inventory and receivable which previous studies argue influence audit fees.

The study adopted a quantitative approach relying on panel data regression analysis to achieve the objectives of the study. Previous literature indicate that several variable that influence audit fees include clients size, operational risk and complexities, the type of auditor, profitability of the clients etc. (Houqe, 2017; Camaran & Perotti, 2014; Choi & Yoon, 2014; Griffin *et al.*, 2009; Kim *et al.*, 2012; De George *et al.*, 2013; Vieru & Schadewitz, 2010). The study examined the effect of these variables including IFRS adoption on both audit and non-audit fees. Based on the above, the study developed a cross-sectional regression model as follows:

$$AF_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 IFRSYR_{it} + \beta_3 BIG4_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 LOSS_{it} + \varepsilon_{it}$$

$$NAF_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 IFRSYR_{it} + \beta_3 BIG4_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 LOSS_{it} + \varepsilon_{it}$$

Table 1. Variable definition and their measurement

Variable	Measurement
LogAF	Natural log of the audit fees
IFRSYR	Dummy, IFRS-adoption year coded 1 for First time IFRS financial statements
IFRS	Dummy variable, coded 1 if firm adopt IFRS, 0 Otherwise
SIZE	Natural log of total assets at end of financial year to measure size
LEV	Ratio of total debts (total liabilities - deferred tax) to total assets
LogNAF	Natural log of non-audit fee
LOSS	Net loss (or negative income) reported by a company in the current year coded as 1 if company suffers loss and 0 otherwise.
ROA	Ratio of earnings before interest and tax to ending total assets.
BIG4	Auditor type=1 if the current auditor were a BIG 4 or 0 otherwise

4.1 Control variable

Previous studies have found that firm characteristics such as leverage, loss in a particular year, complexity of operations, company size, riskiness of operations, and profitability of the audited firm affect audit fees (Choi & Yoon, 2014; Shan & Troshini, 2016; Yalley, 2013). In the Ghanaian context Yalley *et al.* (2013) found that the size of rural banks was positively associated with audit fees whiles Musah (2017) found a positive relationship between audit fees and firm size. The study included some of these variables as control variables.

4.2 Data

The study is based on publicly available data obtained from financial statement of the sampled firms. All public companies including banks and insurance are required to publish their financial statement online and with the relevant regulatory bodies. The data was hand-collected from the annual report of these companies. The sample consist of 530 financial statement for the audit fee model equivalent to 53 firms and 350 financial statement for the non-audit fees model representing 35 firms because some companies did not disclose non-audit fees in the note to their accounts. The sample comprise of 20 non-financial firms, 24 banks and 5 insurance companies. The sample period covers 2003 to 2013 but based on an unbalanced panel data. The effective year of IFRS adoption for all these firms is 2007 even though some complied with the directive in 2008 because of technical difficulties in complying and the need to train staff to be familiar with the new standard.

5. Analysis and discussion

Table 2 presents the descriptive analysis of the study.

Table 2. Descriptive statistics

Variable	Mean	St. Deviation	Minimum	Maximum
AF	4.811	0.466	3.398	6.799
NAF	3.526	0.341	2.664	4.558
IFRS	0.614	0.488	0.000	1.000
SIZE	8.604	0.543	7.234	9.754
LEV	0.870	0.075	0.092	0.997
IFRSYR	0.154	0.414	0.000	1.000
ROA	0.059	0.031	-0.053	0.085
LOSS	0.065	0.247	0.000	1.000
BIG4	0.622	0.487	0.000	1.000

On the adoption of IFRS, the results show that 61% of the firms' sampled financial statements have been prepared in compliance with IFRS. The results from the descriptive statistics also shows that firm in the financial sector are highly leveraged with 87% of capital being debt. The results of the Big4 suggest that majority of the firms are audited by internationally-linked audit firms.

5.1 Effect of IFRS adoption on audit fees

To examine the impact IFRS adoption have on audit and non-audit fees, a panel regression model was used to establish the relationship between the two variables. Various tests were undertaken to determine the reliability of the estimate and to decide which model (fixed effect or random effect) was best for the model. For instance the Breusch- Pagan test was conducted to test for heteroscedasticity. The results for the two models were significant at 5% suggesting that null hypothesis is rejected and that there is heteroscedasticity. The robust estimates in STATA were applied to both models to resolve issues of autocorrelation and heteroscedasticity. The study also used the variance inflation factor (VIF) to test for multicollinearity. The results show that the overall VIF for the first and second model were 1.85 and 1.35 respectively which are less than 2 and as such there is little or no problem for multicollinearity. Finally, the Hausmann test was conducted to decide which model to use. After conducting the Hausmann test, the study settled on the random effect model for the first model and fixed effect for the second model because it's provided more consistent results using the R^2 values and the outcome of the Hausmann test in line with previous studies.

**The effect of IFRS adoption and Big 4 audit firms on audit and non-audit fees:
Evidence from Ghana**

The overall Adjusted R-square is 0.818 for the first model and 0.627 for the second model which suggest that the independent variables have higher explanatory power. The Wald Chi² which is a measure of the fitness of the model in the case of a random effect model in a Stata program also had a significant probability for both models which suggest that the model is well fit. The regression results for the first model that examined the effect of IFRS adoption on audit fees is presented in Table 3 below.

Table 3. Regression results on IFRS adoption and audit fees

Variables	Coefficient	Standard Deviation
IFRS	0.091**	1.970
IFRSYR	0.028***	4.289
BIG4	0.096***	2.845
SIZE	0.577***	13.621
LEV	0.004	0.210
ROA	0.011	0.129
LOSS	0.081**	1.966
CONST	0.120	0.314
Number of observations	530	
Wald Chi ²	39.299	
Prob > Chi ²	0.000	
Adjusted R	0.818	

(***significant at 1%, ** significant at 5%, * significant at 10% level)

The results show that IFRS adoption is positive and significantly associated with audit fees at 1% significance level. This suggests that the adoption of IFRS has increased audit fee. This result confirms the results of previous studies (Camaran & Perotti, 2014; Choi & Yoon, 2014; De George *et al.* 2012; Kim *et al.* 2012; Redmayne & Laswad, 2013; Kim *et al.* 2012; Griffin *et al.* 2009; Shan & Troshani, 2016) as well as the first hypothesis of the study which states that IFRS adoption has significant effect on audit fees in Ghana. The year of adoption (IFRSYR) however also showed a positive association with audit fees which also suggest IFRS adoption increased during the transitional period. The results is consistent with previous studies (Camaran & Perotti, 2014; Choi & Yoon, 2014).

The variable Big4 was positively associated with audit fees at a 1% significance level. The result confirms previous studies such as Hongerdoorn (2006) as well as Schadewitz and Vieru (2010) and suggests that big4 audit firms charge higher audit fees than non-big4.

On the control variables; size of the firm and loss which is a measure of risk is significantly associated with audit fees. Size was significant at 1% significance level and had a positive relationship with audit fees as expected. Firm reporting loss was also positively associated with audit fees as expected because of additional risk loss reporting brings.

Other control variables were found not to have any significant association with audit fees. Some of these control variables include; leverage and return on asset which is a measure of profitability and leverage which is a measure of risk. The expectation of these variables as per literature is that they influence audit fees positively.

5.2 Discussion of findings on IFRS and audit fees

The results of the first model as discussed above show that IFRS adoption has resulted in an increase in audit fees consistent with literature and the first hypothesis of the study. The results imply that additional effort was brought to bear on auditors with the mandatory adoption of IFRS by listed firms in Ghana. The results show that auditors in Ghana consider IFRS adoption as causing significant changes to the components which determines audit fees.

The results can be interpreted from three different perspective based on literature. First, the risk that financial statement prepared in compliance with IFRS could be materially misstated is high. Second, the fact that auditors in Ghana provided non-audit and consultancy services which could increase their knowledge of the client financial statement and result in a spill over effect from non-audit service to auditing may not exist. Third, there is less competition for audit firms in Ghana resulting in these firms translating IFRS compliance financial statements auditing into audit costs. This result is not consistent with the finding of Vieru and Schadewitz (2010) that conducted a similar study in Finland and had a positive but statistically insignificant relationship with audit fees.

The results are however consistent with most studies across the globe especially from Europe, Australia and New Zealand. From the auditor's point of view there was an increase in accounting regulation as a result of mandatory IFRS adoption, therefore, increases client related risk and potentially results in more time-consuming work for the auditor to collect evidence in support of the audit opinion (Choi & Yoon, 2014; Kim *et al.*, 2012). The results confirm the assertion in literature that IFRS adoption increases the complexities in the client's financial statements and its associated risk which auditors compensate that additional responsibility with a higher audit fees.

5.3 Big 4 audit firms and audit fees

The results from the regression also confirms the third hypothesis which is to the effect that the Big4 audit firms charge higher audit fees as compared to non-big 4. The significant positive coefficient on BIG4 suggests that a member of the Big 4 firms charge a much higher level of auditing fees than the domestic auditing firms in Ghana. The significant positive effect is not explained by the adoption of IFRS but the fact that the big4 provide high quality audit hence charge higher fees. This finding is consistent with the results of Campa (2013) and Lin and Yen (2016) but different from the findings of Jianfang *et al.* (2012). The higher audit fees charged by the Big4 is as a results of the perceived audit quality and richer expertise and experience to assist them to deal with the higher level of demand for the auditing quality under the new accounting standards.

Table 4. Effect of IFRS adoption on non-audit fees

Variables	Coefficient	Standard Deviation
IFRS	0.141***	2.988
IFRSYR	0.027***	4.336
BIG4	0.106***	2.872
SIZE	0.500***	11.411
LEV	0.002	0.010
ROA	0.080	0.869
LOSS	0.209**	2.348
CONST	0.274	0.699
Number of observations	350	
Wald Chi2	96.150	
Prob > F	0.000	
Adjusted R	0.627	

(***significant at 1%, ** significant at 5%, * significant at 10% level)

The results of the regression analysis show that IFRS adoption has a positive effect on non-audit fees just like audit fees. Also, the relationship is statistically significant at 1% significance level suggesting that IFRS adoption have significant impact on non-audit fees as it did in audit fees. The year of adoption also have significant positive relationship with non-audit fees.

The Big 4 audit firm as expected had also a positive and significant relationship with non-audit fees. The results imply that the big4 audit firms charge higher amount as non-audit fees just like audit fees in the first model.

Almost all the control variables in the model were statistically insignificant with the exception of firm size and Loss which had a positive significant relationship with non-audit fees at a 1% and 5% significance level respectively.

5.4 Discussion of findings on IFRS and non-audit fees

The results of the study revealed that IFRS adoption have a significant impact on non-audit and accounting consultancy services cost. This result is consistent with the second hypothesis which states that IFRS adoption has significant effect on non-audit fees in Ghana. The reason for this result could be attributed to the fact that there was a significant gap between the Local GAAP which is the Ghana National Accounting Standards and IFRS which required that auditors assist companies to comply with the new standards by providing consultancy services. The results suggest that IFRS adoption required technical skills which most of the listed firms did not have and had to engage these audit firms who have the expertise as a result of working in other jurisdictions where IFRS was adopted before Ghana. The result was not just significant for the post-adoption period but was significant during the transition period as IFRSYR was also positively associated with non-audit fees.

The result of the study is consistent with prior studies as more research has usually found a positive relationship between IFRS adoption and non-audit fees. Prior research (Choi & Yoon, 2014; Shin & Kim, 2010; Whisenant *et al.*, 2003; Geiger & Rama, 2003 and Naoum *et al.*, 2011) has documented a positive relation between IFRS adoption and non-audit fees the result is however inconsistent with the findings of O'Keefe *et al.* (1994) which found no significant relationship between IFRS adoption and non-audit fees.

Overall, it can be said that IFRS adoption did not require companies adopting IFRS for the first time to engage the services of professional accounting bodies in the transition period as the year of adoption was also negatively associated with non-audit fees. The overall impact was felt on the post adoption period and not the year of adoption.

5.5 Big 4 Audit firm and non-audit fees

The results of the second regression analysis in table 4 shows that firms that are audited by the big 4 audit firms or the internationally-linked audit firms charge higher audit fees than non-big 4. This result has nothing to do with IFRS adoption but simply suggest that the internationally-linked audit firms have the expertise and produce high audit quality hence they charge premium for their service. The result is consistent with the expectations of the third hypothesis and consistent with the results of Choi and Yoon (2014).

6. Conclusions

IFRS is a principled-based accounting standard that requires preparers of financial statements to establish logic and reason within the context of the framework of accounting and apply those principles consistently. The complexities that mandatory IFRS brings as well as the related audit risk requires that auditors exercise high levels of professional scepticism, more effort both as consultants to their clients and auditors. The increased burden as a result of mandatory IFRS adoption has translated into increased audit and non-audit fees in even developed economies which are supported by the findings of this study. The results of the study showed that there was a positive and significant association between mandatory IFRS adoption by firms in Ghana and audit and non-audit fees. The results emphasize the complexities of IFRS and the professional judgement needed to be exercised by preparers of financial statements required more effort and technical skills from audit firms in the form of consultancy services and audit fees. Also both the audit fees model and the non-audit fee model had a positive association with the year of adoption suggesting that IFRS cost increased in the transition period consistent with the finding of some studies in other jurisdictions.

The results also show that big 4 audit firms charge higher audit fees than non-big4. This finding means that Ghanaian affiliated Big 4 firms can offer high-quality audit services because they have invested heavily in gaining experience and in improving expertise and as such charge higher fees for their expertise.

This study has implications for African countries that are yet to adopt IFRS especially companies in Liberia and other Anglophone African countries and even the Francophone countries. Companies in those countries should anticipate the cost associated with the mandatory adoption of IFRS and compare it with the anticipated benefits. Also, future studies could expand the scope of the study to include specific IFRS requirements that increases the complexities and audit risk which results in higher audit fees. A related research question could involve the nature of the longer-term trend of fees after IFRS adoption.

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