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The effects of International Financial Reporting Standards (IFRS) adoption on audit fees in Ethiopia - The case of commercial banks

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This is to certify that the thesis prepared by Amanuel Tsegaye, entitled: The effects of international financial reporting standards (IFRS) adoption on Audit fees in Ethiopia- The case of commercial banks in in partial fulfillment of the requirements for the degree of Master of Science in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Declaration

I, Amanuel Tsegaye declare that this paper is a result of my independent research work on the topic entitled the effects of international financial reporting standards (IFRS) adoption on Audit fees in Ethiopia- the case of commercial banks in partial fulfillment of the requirements for the degree of masters of science in Accounting and Finance at Addis Ababa University. This work has not been submitted for a degree to any other academic entity. All the references are also duly acknowledged.

Amanuel Tsegaye

Signature:_____

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ABSTRACT

The objective of this study is to assess the effects of mandatory adoption of IFRS on the audit fees of Commercial Banks (CB) in Ethiopia and it utilized correlational research design with quantitative data collection and analysis on the data gathered from yearly financial audit reports of the banks during the period of 2014 to 2018. Despite population of the study is limited to existing CBs, the study employed purposive sampling technique in the selection of the banks (n = 17) to comply with availability and accessibility of data that excluded the CBE (the only governmental bank) due to lack of complete data. The data has been analyzed with descriptive, independent t-test, correlation and panel regression analysis statistical techniques using STATA and SPSS software packages. Findings of the study showed a significant positive relationship between IFRS and audit fees which shows that IFRS adoption substantially increased audit fees among commercial banks operating in Ethiopia. This is attributed to the general complexity of the IFRS adoption in Ethiopia. The study also finds that banks audited by the Non-GradeA audit firms experience greater audit fee increase in post IFRS period than those audited by the GradeA audit firms. However, the study is limited to the Commercial Banks in Ethiopia, thus, future studies that include several industries might provide better understanding of the influence of IFRS adoption on audit fees.

KEY WORDS:

IFRS Adoption; Audit fees; Regulatory reforms; Commercial banks of Ethiopia

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Acronyms

AABE Accounting and auditing Board of Ethiopia

ACCA Association of Chartered and Certified accountants

ECXA Ethiopia Commodity Exchange Authority

ECX Ethiopia Commodity Exchange

EPAAA Ethiopian Professional Association of Accountants an

FASB Financial Accounting Standards Board

GAAP General Accepted Accounting Principles

IAS International Accounting Standards

IASB International Accounting Standards Board

IASC International Accounting Standards Committee

IFAC International Federation of Accountants

IFRS International Financial Reporting Standards

ROSC Report on the Observance of Standards and Codes

SME Small and Medium Enterprise

SPSS Statistical package for social science

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The increasing growth in international trade and investment has brought to the fore the enthusiasm for adoption of International Financial Reporting Standards (IFRS) by both the developed and developing countries (Owolabi & Iyoha, 2012). In the past few years, many developed and developing countries have adopted IFRS as the basis for financial reporting (Thompson 2016). Companies, who operate in a demanding market, whose competition grows in fiercer way, the accounting information stands as a strategically able to provide cross border expansion opportunities, as investors are able to assess the legislations of different companies in different countries. Reliable financial records are vital for the very survival of the contemporary social order. The accounting and auditing processes have come under sharp scrutiny in the wake of Enron and other financial scandals. High quality, comprehensive reporting standards followed by attestation of qualified independent auditors play a vital role in enhancing the reliability of financial information and veracity of the financial statements.

High quality accounting and financial reporting aids the public to apportion their hard-earned resources efficiently. When making decisions about capital allocation, investors need to know that financial information they are given is credible and reliable. Eminent financial reporting framework, enhanced accounting standard, quality audits and audit opinions on financial reports are crucial to achieving investor confidence. (Rajgopal, Suraj & Zheng, 2015).

Proponents of IFRS claim that IFRS will improve quality of financial reports, improve the comparability of entities, it gives better access to global capital markets, reduced cost of capital,

and encourages cross border fund acquisitions (Ball, 2006). Despite its advantages, IFRS adoption also consumes additional costs in capacity building programs and implementation processes by all regulatory bodies, firms and training institutions in order to provide the needed manpower for IFRS implementation, monitoring and compliance. As such, many developing countries are currently migrating to IFRS by abandoning their national accounting standards. Adopting IFRS as a national standard will have significant benefits for companies to improve corporate transparency that is required by investors and the public (E. Dodzi, 2015). In recognition of the adoption, Ethiopian government officially declared the adoption of IFRS by the issued Proclamation No.847/2014 "Financial Report Proclamation of Ethiopia" which entail Ethiopian companies to follow IFRS in their financial statement presentation. (Federal Negarit Gazeta, 2014). According to Fantahun (2012), previous Ethiopia's financial reporting practices were driven by its tax laws and fragmented accounting practices acquired from the country's institutions of higher learning**.** He further claims that IFRS helps to acquire nationwide conceptual framework to guide selection and application of an accounting principle, realization of reliable and comparable financial information. The pre-IFRS financial reporting system is erratic because decision to select and apply measurement and disclosure of financial transactions were left to the company's management and its auditors (Fantahun, 2012).

Fantahun (2012) further argues that it will be extra beneficial for countries like Ethiopia, which had no clear accounting regulation except the 1960's set of rules and tax laws which requires a list of detailed rules to be followed in financial statement reporting. Moreover, after the adoption of the IFRS, the Ethiopian accounting environment witnessed and still present several changes that affect especially, the financial statements prepared by companies (Fareedmastan, Gebru, Anuradha & Fissa, 2015).

De-Fuentes and Sierra-Grau (2015) examined business enterprises from 21 countries that voluntarily adopted IFRS between 1994 and 2003 and provided evidence that there was an improvement in the quality of the information covered in the financial statements associated with the application of IFRS. The application of this standard have brought significant benefits to most companies such as improving the comparability of financial information (Fantahun, 2012; Kamwenji, 2014), lower cost of capital (Outa, 2011), increase transparency and quality of financial reports (Vieru, Markku & Hannu, 2010; Yaacob & Che-Ahmad, 2012), positive effect on the capital market (Jacob & Madu, 2009; Kim, Liu, & Zheng, 2012; Shan & Troshani, 2016) predicted by analysts (Humphrey, Loft, & Woods, 2009; Okpala, 2012)**.** Subsequent studies analyzing the effect of mandatory adoption of IFRS on the quality of accounting information in the European Union have yielded similar results (Chen, 2017; Gellings, 2017; Jacob & Madu, 2009; Lin & Yen, 2016; Lourenço & Branco, 2015),

Accordingly, studies in Ethiopian context affirm that adopting IFRS have improved the qualitative characteristics of accounting information, such as comprehensibility, relevance, reliability, comparability, providing a better quality of information. (Fantahun, 2012; Simegn, 2015; Alemi, 2016; Teshome, 2017)

However, there is an edgy argument by opponents of IFRS in the field claiming that the mandatory adoption of IFRS is associated with significant implementation cost that can reduce alleged benefits. They further claim that out of this implementation cost; audit fee takes the lion share (De George et al., 2013). The adoption of IFRS is usually associated with an increased complexity of recognition, measurement and disclosure of elements in the financial statements and requires a greater judgment of preparers, and a more careful work of those who audit the information disclosed (Mulley et al., 2010). Because IFRSs are principle based accounting standards, there is no specific rule as to the accounting treatment, therefore, due to

the lack of clear accounting treatments to follow; it requires more time and efforts to the accountants and auditors to asses' proper accounting treatment for the corporate transactions (Vrentzou, 2011).

Therefore, the adoption of principle based IFRS, unarguably intensifies the complexity of the reporting environment, giving rise to increase in audit fees due to the increase in effort and time required to audit the detailed and complex requirements of IFRS. Moreover, studies on IFRS consequences revealed that the IFRS adoption process as costly, complex and burdensome. (Glover, Taylor & Wu, 2017; Jermakowicz & Gornik-Tomaszewski, 2006; Vieru et al., 2010). Complex nature of IFRS and problems related to the lack of proper implementation makes IFRS more challenging. (Jermakowicz & Gornik-Tomaszewski, 2006).

The move towards a global accounting standard therefore, increases clients accounting and reporting complexity and client's potential insufficient preparations can result in risks in their audit assignment, Furthermore, the increased accounting regulation will cause extra client risk and more time consuming work for the auditor, these complexities, audit risk in turn, are likely to be reflected in audit and non-audit fees (Vieru et al., 2010). Therefore, as the objective of the current study is investigate effects of IFRSs adoption on Audit fees in Ethiopia - in the case of commercial banks, the study also addresses associated factors such as Size of the audit firms, grade of the auditor, financial risks and audit complexity that might influence the audit fees after adoption of IFRSs.

1.2 Statement of the Problem

Comparison of the information present in the financial statements of companies from different countries was usually a complex task. The various types of legal systems combined with other countries' economic and political differences have supported a wide range of accounting systems (Lourenço & Branco, 2015; Ochei & Akande, 2012).

Globalized financial accounting and standardized reports have become artefacts capable of increasing comparability between companies located in different countries, contributing to efficiency in conducting business across borders by conducting international business and attracting external resources (Herbert & Tsegba, 2013). Madawaki, (2012) argues that international accounting standards (IFRS) represent a set of standards that are constantly updated with the current requirements of the world market, and are therefore accepted in a gradual way in several countries.

In December 28, 2014 the Ethiopian government enacted, the Financial Reporting Proclamation, Proc No. 847/2014. This proclamation led to changes in most/ all accounting aspects in Ethiopia. According to Addis fortune reporter Samson Birhane, “many are hopeful that it will have a positive impact on the external auditing market”. The newspaper further discussed the merits of IFRS, noted the views of practitioners, scholars and stakeholders, one of the interviewee, Abdulmenan Mohammed, an expert with 15 years of auditing experience in England and Ethiopia said “It is a cure for the riddled auditing profession with sub-standard works, unaccountable practices and race-to-the-bottom price competitions," (Fortune, 2017)

The introduction of any new accounting framework affects all facets of reporting (Konadu, 2018). While IFRS proponents, supporters, and regulators have joined the acclaimed adoption benefits to improve the quality and credibility of financial information, promote global

comparability and increase investor confidence, implementation of these new standards come with significant cost implications and one major aspect of the transitional cost is an increase in audit function (ICAEW, 2007).

The enormous rapidity of IFRS adoption worldwide have been documented as the biggest change in accounting standards ever seen, and represents another opportunity to examine the effect of regulatory changes on the external audit function. According to Kim et al. (2012), the economic implications of the adoption of IFRS have attracted the interests of stakeholders, and the parties interested in the accounting profession. academic literature have paid considerable attention to the assessment of their economic relevance since the application of mandatory adoption of IFRS between companies listed on the stock exchanges of EU countries. Since then many studies have been conducted to examine the net benefit of IFRS, and documented a sharp rise in audit fees, attributable primarily to the increased audit effort and audit risk resulting from the increased complexity of recognition, measurement and disclosure of elements in the financial statements (Kim et al., 2012).

At the international level, there is evidence that the application of IFRS is associated with an increase in the complexity of the audit and, consequently, the fees charged by the auditors. A survey of Institute of Chartered Accountants in England and Wales (ICAEW, 2007) reported that 67 percent of auditors in European Union (EU) stated that the audit fees have increased after IFRS implementation in financial statement. The ICAEW survey report revealed that the major IFRS related costs is still the escalation of audit fees.

According to Fantahun (2012), one of the basic features of IFRS is that it is a principle based standard and seeks to avoid a rule based mentality. The IASB framework establishes a general requirement to account for transactions in accordance with their substance, rather than only

their legal form. Indeed, IFRS is a complex standard and involves comprehensive detailed disclosures than most previous local GAAPs, as a result it demands greater effort from auditors to conduct the audit assignment. moreover, IFRS inspires transparent reporting, which again call for difficult estimations and higher professional judgment from auditors than most previous local GAAPs that are based on rules and historical cost assumptions (Kim, Yang & Boulevard, 2012). Thus the application of IFRS not only requires exercise of higher level of judgment by the preparer, but a more careful work of those who audit the disclosed information.

Numerous academic studies have explored the impact of regulatory changes on audit fees and found mixed results. Griffin, Lont and Sun, (2009) reported that the mandatory adoption of IFRS considerably increased audit fees charged to New Zealand companies; Vieru et al., (2010) found similar result by Finland companies. Moreover, Kim et al. (2012) in Europe and De-George, Ferguson & Spear, (2013) in Australia have provided consistent evidence of an increase in audit fees after the adoption of IFRS. Kim et al., (2012) found that the mandatory adoption of IFRS provided an increase in audit costs on European companies, especially in countries with lower levels of investor protection. De George et al. (2013) have evidenced an association between the adoption of IFRS and an increase in audit fees in Australian companies, especially in larger companies that require a more complex auditing process. Bratten, Gaynor, McDaniel, Montague and Sierra (2013) found the adoption of IFRS to be more costly during the year of transition as a result of the greater effort, knowledge, skill and competencies needed to implement the new standard.

The adoption of IFRS is a major accounting event that increased the complexity of the audit process, which increases the efforts required to undertake the audit and consequently translate into high audit fees. Furthermore, Redmayne & Laswad (2013) argues that the augmented audit

fee is not merely, because auditors require more effort to go through all the detailed disclosure but also more importantly, auditors demand more effort and time to reduce audit liabilities.

In African continent, Thompson (2016) in his article "Accounting for a Developing World: A look at International Standards on Developing Countries", reported evidence that the major cost of the move towards IFRS by African countries is Audit and Audit related fees. According to Thompson (2016), when a developing nation elects to adopt and implement IFRS, they often face many challenges and hurdles along the way. He claim that choosing to implement international accounting standards is simply the first step, and what follows is typically a long line of issues that need to be resolved before the benefits, if any, are to be realized. Similarly Konadu (2018) studied consequences of IFRS adoption based on 104 companies listed on the stock exchanges in 8 African countries using publicly available data he concludes that in agreement with Thompson (2016), audit fees have significantly increased as a result of companies adopting IFRS. Moreover, Konadu (2018), claimed that the perceived benefits of IFRS adoption have caused neglect in research on the possible unintended consequences of IFRS on the audit market, specifically in Africa. Hence there is a need to empirically examine the impact of IFRS adoption on the audit market in Africa.

Furthermore, Thompson (2016), claims that developing countries generally do not have an established accounting and auditing tradition, lack a strong professional accounting body, the accounting and auditing systems may be inadequate or nonexistent. Hence, the effect of implementing International Financial Reporting Standards (IFRS) in developing countries needs a detailed country specific study.

However, most of the studies conducted to date are in the context of developed economies with established structures; the existence of such evidence in Ethiopia is not known yet. Prior

literature documented variation in the net benefits of IFRS adoption in different countries, articulates the need to separate, and more fully understand, the costs associated with harmonization" (De George et al., 2013). Hence this issue calls for the subjective evaluation of the matter in Ethiopian context. This study therefore aims to examine the effect of the adoption of IFRS on audit fee in Ethiopian context. This study further aim to contribute to the ongoing debate on net benefit of IFRS adoption.

1.3 OBJECTIVES OF THE STUDY

1.3.A General objective

The main objective of this study was to assess the effects of adoption of International Financial Reporting Standards (IFRS) on the audit fees in Ethiopia

1.3.B Specific objectives

- To examine whether the mandatory adoption of IFRS affects the audit fee charged for financial statement audit service.
- To examine the level of audit fee variation for financial statement audit service prepared under IFRS with similar statement prepared under previous GAAP counterpart.
- To identify auditee related factor that affect the pricing of audit.
- To examine whether the audit firm size affects the pricing of audit.

1.4 Research Questions

In view of the below research objectives, the following are the research question:

Q1: Does mandatory adoption of IFRS by Ethiopian companies have an impact on the audit fees?

Q2: How the size & complexity of auditee affect the audit fees?

Q3: In what circumstances the size of audit firm affect the audit fees?

1.5 Research Hypotheses

Taking into consideration, the nature and extent of the problems stated so far, and prior literatures discussed later, it is necessary to formulate the following hypotheses:

H_1: There is a positive association between adoption of IFRS and audit fees.

H_2: Given that the financial statements are prepared in accordance with IFRS, the extra audit fees is higher for big and more complex firms than small firms.

H_3: Audit fees is positively associated with the size of the audit firm after adoption of IFRS.

1.6 Significance of the Study

The significance of this study can also be seen in the line of research, practice and decision-making. With respect to the relevance of research, much is not documented in Ethiopian context in the existing literature either published research or journal article on how IFRS could affect the audit of financial statements in Ethiopian setting, hence this study principally examine the effects of the mandatory adoption of IFRS on the financial audits, specifically on audit fees, using the Ethiopian banks as a subject matter.

Besides it contributes to, the edgy arguments by scholars in the field that the mandatory adoption of IFRS is associated with significant implementation cost, out of which Audit fee is forms the lion share (De George et al., 2013). This study helps to make an informed assessment of the impact and suitability of the adoption of IFRS when evaluating its economic relevance.

Although Internationally, the variables of the research have been studied, as it is verified in the works of (De George et al., 2012; Griffin et al., 2009; Kim et al., 2012; Lin & Yen, 2010; Vieru et al., 2010). However, in the national level, the variables covered so far are inadequately studied (Afesha, 2014; Mustafa, 2017).

The current study is one of the few studies that examine the impact of such major changes in accounting, auditing and regulatory environment in Ethiopia. Besides, the fact that no empirical evidence to date in the context of Ethiopia have showed the effects of the adoption of IFRS on audit fees, this study will be forerunner to provide empirical evidence on the effects of the adoption of IFRS on audit fees. Therefore, the current study might contribute to the scarce theoretical knowledge regarding the variables that significantly affect the audit fee formation in Ethiopian context as well as it might add up to the existing huge literature gap. With regards to practical importance, the study might also be relevant for researchers, students and policy makers in other developing countries who are yet to adopt the IFRS, in determining and understanding the degree of complexity, the time it consumes and the monetary cost required during implementation of IFRS and it might be an experience for predicting the opportunities and challenges they encounter during adopting the Standards that their countries may.

1.7 Limitation of the Study

It is the wish of the researcher to study the effects of adoption of IFRS in audit function; nevertheless, since the subject is very broad, all aspects of the issue couldn't be assessed by this thesis. Therefore, the study is limited to the specific effects of IFRS on audit fees. First, the mandatory adoption of IFRS in Ethiopia mandated the financial sector and public entities, to prepare their first IFRS based financial statements and results of their operation for the fiscal year 2017/2018. This makes the population narrow therefore, the data constitutes relatively a small sample size. To make the matter worse, there were circumstances in which incomplete sets of financial information and records availed. Therefore, small population size and the diminution in data due to the missing or incomplete annual reports would bring to the effect of diminishing power of statistical tests applied. Hence, the statistical result may lead to inaccurate indication on audit fees after IFRS adoption.

Secondly, the fact that this study used only financial institutions, comparisons between industries and their relative complexities couldn't be captured, added to this fact, number of audit firms involved in the provision of audit service in this industry is limited, this may affect pricing variability between the audit firms. Finally, In addition to the above-mentioned limitations, the fact that no prior studies have been made in Ethiopia, in relation to the issue, the model adopted and variables used in this study are selected based on prior literatures and evidences in developed countries, though the study tried to contextualize to the Ethiopian setting; it might not fully capture other country specific variables in Ethiopian context.

CHAPTER TWO

LITERATURE REVIEW

2.1 International Financial Reporting Standard

2.1.1 General Overview of IFRS

International Financial Reporting Standards are a single set of high quality, comprehensive and enforceable global accounting standards that require transparent and comparable information in general purpose financial statements issued by an independent organization registered in US and operates in the United Kingdom known as the International Accounting Standards Board (IASB). The move towards developing an acceptable global high quality financial reporting standard started in 1973 when the International Accounting standards committee (IASC) was formed by Professional Accounting Bodies from Canada, USA, United Kingdom, Germany, France, Netherlands, Australia, Mexico and Japan (Iyoha, 2011). In response to the globalization and growing demand for transparent, comparable financial information in the markets in 2001, the International Accounting Standards Committee (IASC) made a thorough restructure and formulated the International Accounting Standards Board (IASB). The IASB, is responsible for issuing the International Financial Reporting Standards (IFRS), These standards are issued after being developed through international due process involving practitioner's, accountants, financial analysts, the business community, stock exchange regulators, legal authorities, and other interested organizations around the world (Gina, Adeghe & Kingsley, 2016).The institution puts forward the standards that would better serve public companies worldwide than the local standards in the country in regards to the aspect of comparability, transparency and economic growth. The IASB besides issuing the

standards and interpretations, in pursuance of its objectives, the board cooperates with national accounting standard setters to achieve convergence in accounting standards in the world (Gina, Adeghe & Kingsley, 2016).

IASB claims to have a public commitment from 130 countries to its initiative of global implementation of a single set of accounting standards. Of these, 116 countries require IFRS for all or most of their domestic, publicly accountable entities whereas the remaining 14 countries allow or require IFRS for the publicly listed entities in their jurisdictions (IASB, 2016).

2.1.2 IFRS in Ethiopia

In Ethiopia, until recently, there was no legal requirement for compliance with any specific accounting and auditing standards, except some directive and minor provisions issued in various separate laws by various regulatory bodies.

Alemi and Pasricha, (2017) analyzed various legal documents pertaining to financial reporting in Ethiopia. Their study revealed that corporate financial reporting legal and regulatory frameworks are framed in Commercial Code of 1960, and disseminated between various proclamations, regulations, directives, accounting procedures and manuals, codes of corporate governance and has been regulated by different regulatory bodies as there has not been any single organized financial reporting regulatory body in Ethiopia (Alemi & Pasricha, 2017).

Similarly, Reports on the Observance of Standards and Codes (ROSC Ethiopia, 2007), a joint initiative by the World Bank and the International Monetary Fund (IMF) in consultation with key stakeholders including governmental and non-governmental institutions conducted a review of corporate sector accounting, auditing, and financial reporting practices and

supporting infrastructure in Ethiopia. The results of the review found that the Commercial Code has made directors of companies responsible for preparation of financial statements, including consolidated financial statements for group companies, and ensure an audit of the financial statements conducted. Nonetheless, there is no requirement to comply with any accounting standards while preparing financial statements, similarly, there is no requirement to comply with any auditing standards in provisions for audit; furthermore, the report noted that the qualification requirement of auditors to be nonexistent in the provisions (ROSC Ethiopia, 2007).

Furthermore, Alemi and Pasricha (2017) noted that even though the Office of the Federal Auditor General (OFAG) was regulating the accountancy profession through the committee established under its ambit but OFAG has had other broader responsibilities. As a result, financial statements were not required to be filed and reviewed as to whether they have been prepared in compliance with existing rules and regulation or not and the work of auditor has not been reviewed (Alemi & Pasricha, 2017).

Based on its review ROSC-Ethiopia (2007) made the following recommendations: revise the Commercial Code 1960 and other relevant laws and regulations; enact a financial reporting law; establish a National Accountants and Auditors Board; set accounting standards and mandate ISA for all auditors; establish a strong professional accountancy body with membership of the International Federation of Accountants (IFAC); establish a local professional and technician accountancy qualification; enhance the capacity of all regulators to enable them to effectively discharge their responsibilities; and to handle International Financial Reporting Standards-related issues in the regulation and conduct awareness campaigns and related programs. In line with Recommendations of ROSC Ethiopia (2007), on December 5, 2014, the House of Representatives of Federal Democratic Republic of Ethiopia passed the

Financial Reporting Proclamation, proclamation No.847/2014. This proclamation pronounced that Ethiopia officially adopted IFRS and mandated International Standards on Auditing (ISA) for auditors. Moreover the ministry of council, though regulation no. 332/2014 established the Accounting and Auditing Board of Ethiopia (AABE) to oversight such initiatives(Federal Negarit Gazeta, 2014).

2.1.2.1 Enactment of the Financial Reporting Proclamation

The enactment of a Proclamation to Provide for Financial Reporting (Proclamation no. 847/2014) is the current development in the accounting, auditing and financial reporting history in Ethiopia. The Ethiopian government as per the recommendation of (ROSC Ethiopia, 2007) took a huge step in standardizing the financial accounting and auditing practices of the country.

The government of Ethiopia issued this proclamation to achieve the following objectives as stated in Article 1 of the proclamation:

(A) To establish a sound, transparent and understandable financial reporting system applicable to entities in both private and public sectors;
(B) To have a uniform financial reporting law that enhances transparency and accountability by centralizing the hitherto decentralized financial reporting structures of Ethiopia;
(C) To support various building blocks of the economy and to reduce the risk of financial crisis, corporate failure and associated negative economic impacts; and
(D) To ensure that the provision of financial information meets internationally recognized reporting standards.

2.1.2.2 Establishment of the Board

The Accounting and Auditing Board of Ethiopia, established by Council of Ministers Regulation No. 332/2014 entitled" the Establishment and the Procedure of the Accounting and Auditing Board of Ethiopia Pursuant to Article 4(1) of the Financial Reporting Proclamation No. 847/2014. Accordingly, provision of Article 3(1) of the Regulation No. 332/2014 describes. The Accounting and auditing Board of Ethiopia has been established as an autonomous government organ having its own legal personality (Federal Negarit Gazeta, 2014).

According to Regulation, the board shall be accountable to the Ministry of Finance and Economic cooperation (Art.3/2 of Regulation 332/2014). Article 5 of the Regulation 332/2014 sets the objectives as:

(A) Promoting high quality reporting of financial and related information by reporting entities;
(B) Promoting the highest professional standards among auditors and accountants
(C) Promoting the quality of accounting and auditing services;
(D) Ensuring that the accounting profession is used in the public interest; and
(E) Protect the professional independence of accountants and auditors.

The Accounting and Auditing Board of Ethiopia consists of 12 members, which includes one representative from the following Ministries, governmental agencies and organizations: Ministry of Finance and Economic Cooperation (MoFEC); Ministry of Justice (MJ), Ministry of Education (MoE); Ministry of Trade (MoT); Office of General Auditor (OFAG); National Bank of Ethiopia (NBE), Ethiopian Revenue and Customs Authority (ERCA); Ethiopian Commodity Exchange Authority (ECEX); Ethiopian Professional Association of Accountants

and Auditors (EPAAA), Accounting Society of Ethiopia (ASE), and two representatives from Ethiopian Chamber of Commerce and Secretariat Associations (ECCSA).

2.1.2.3 Roadmap to IFRS Implementation in Ethiopia

According to AABE (2015), the adoption of IFRS in Ethiopia comprised of three phases. The following are brief summaries of the three phases.

Phase 1: Significant Public Interest Entities and all Financial Institutions and public enterprises owned by Federal or Regional Governments at July 8, 2016 is recommended as the date for adoption of IFRS for financial institutions and large public enterprises. The choice of July 8, 2016 is anchored on the need to give sufficient period over which to effectively transit to IFRS.

Phase 2: Other Public Interest Entities (ECX member companies and reporting entities that meet PIE quantitative thresholds) and IPSAs for Charities and Societies for statutory purposes, by July 8, 2017. This means that all other public interest entities and Charities and Societies in Ethiopia will statutorily be required to issue IFRS and IPSAs based financial statements respectively for the year ending July 7, 2018.

Phase 3: small and Medium-sized entities IFRS for SMEs shall mandatorily be adopted as at July 8, 2018. This means that all Small and Medium-sized Entities in Ethiopia will statutorily be required to issue IFRS based financial statements for the year ending July 7, 2019 (AABE, 2015).

After the establishment and functioning of AABE, the regulations and procedures on Ethiopian audit firms became tighter and since then changes in the Ethiopian firms have been witnessed for example all previous OFAG registrant audit firms are required to be re-registered with AABE. Furthermore, the regulation provides authority to AABE to conduct inspections and

investigations concerning registered public accounting firms, and enforce their compliance with IFRS/IAS. Hence, all AABE registered audit firms, regardless of size, faced increased quality requirements after the establishment of AABE. All else equal, increased quality requirements could lead to higher chances of audit failures, which could in its turn lead to litigation. Likewise, it may also be presumed that the auditors have increased their effort, which again should be reflected in the reported audit fee for the year starting from 2017 (AABE, 2015).

2.2 Audit Fee Formation

Audited financial statements constitute internationally accepted means and methods through which business corporations report their operating results and financial positions. These documents, on the completion of audit, are accompanied by an audit report prepared by independent qualified and recognized accountants, expressing their professional opinion on the fairness of the company's financial statements. The contribution of the independent auditor is to give credibility to financial statements by attesting whether the preparation of these statements are in conformity with recognized accounting standards. Hence, most countries require audited financial statements as part of citizen protection, the existence of such laws has led to creation of audit market and competition among audit firms. Pricing of audit services has been an interesting issue for the researchers and different studies were conducted to explore the factors that determine the audit fee charged by an auditing firm (Anwar & Leghari, 2015)

Mustafa (2017) reported that the audit fee charged is influenced by mainly two factors: Auditor and Auditee related factors. Auditor dependent factors include auditor size, the reputation of the auditor, auditor experience, competition in the audit market, industry specialization of the auditor and big four status of the auditor (Joshi & AL-Bastaki, 2000). While, Auditee related

factors comprises of the Audited company size, complexity of operations, risk, and the profitability of the Auditee company (Cannon & Bedard 2017; Joshi, Bremser & Al-Ajmi, 2008; Ng, Tronnes & Wong, 2018)**.**

Ghosh and Pawlewicz (2008) claimed that traditionally, audit fee studies have ignored the changes in regulatory and disclosure environments. To understand audit fee formation under the presence of IFRS, more insight is needed on how fees paid to auditors and regulatory changes are related. Recently, several studies have showed that the regulatory changes and audit fee pricing are directly related. Consequently, scholars in the field have identified that the degree of legal regime strength as additional new determinants of audit fee. For example, Ghosh and Pawlewicz (2008) have shown that differences in regulatory and disclosure environments affect audit fee differences across countries, but changes in the regulatory and disclosure environment within a single country have rarely been addressed (Vieru et al., 2010). Similarly, Kim, Liu and Zeng (2012) found evidence that the additional audit fee premium resulted from changes in regulatory and disclosure environments to be lower in countries with stronger legal regimes and higher in countries with fragile legal regimes.

2.3 The audit fee Model

The audit fee model is the main theoretical foundation for studying factors affecting the prices of external audits. Several studies used this model in different research areas such as investigating the audit fee premium with the effect of Sarbanes- Oxley Act 2002 (Griffin et al., 2007; Salman & Carson, 2009) and the audit fee premium with the effect of IFRS (De George et al., 2013; Kim et al., 2012).

The Audit fee model developed by Simunic (1980) and he defines audit fees paid by auditee companies as the product of unit price and the quantity of audit services demanded by the management of the audited company, where cross-sectional differences in fees can represent either the effect of quantity differences or price difference. He considered the external audit to be a subsystem of an auditee's overall financial reporting system, hence audit service is viewed as an economic good to the auditee, which has substitutes and complements in consumption. Simunic assumes that the auditee and the auditor are risk-free and they want to maximize their expected earnings each period. Thus, auditee management seeks to maximize the expected profits of the financial reporting entity, while the auditor seeks to maximize the expected profits of the audit firm (Simunic, 1980).

Simunic (1980) theorized total audit costs consist of two parts, which are (i) the resource cost component, which depends on the level of audit effort and (ii) the liability loss component, which depends on the expected cost of the client's business risk. He further assumes that the potential legal liability of an auditee and auditor to financial statement users drives the design of external financial reporting systems. Hence, he believed that the benefits are in the nature of liability avoidance. Existence of these two components will prevail companies to promote the audit process by increasing the amount of resources used to reduce the expectation of losses in the audited financial statements (Simunic & Stein, 1996). Simunic analyzed the factors that are significant in explaining the audit fee using an empirical regression model based on audit fees and related publicly held data of 397 corporations in the United States. The data were analyzed using a series of least-squares regressions, where the specification of the regression equations was derived from the model of audit fee determination. In his audit fee model there are three factors affecting the audit fees: (a) the size of the auditee; (b) the complexity of the auditee's

operations; and (c) client's audit risk. His tests provide empirical evidence that the scale of the auditee is the main factor influencing audit fees (Simunic, 1980).

The level of audit fees can be influenced by other general factors, which are indirectly related to the engagement e.g., the size of audit firm, some big firms in the U.K charge more than others for auditing companies of similar size and in the same industry (Ling et al., 2014). Conversely, Simunic (1980) found that the big firms enjoy economies of scale which could be passed on as lower prices to their clients. Other factors could also have a general impact on the level of audit fees, i.e., the nature of the market for audit services, the probability of obtaining non audit work such as, accounting, taxation, and management consultancy services, the continuity of client, and the reputation of company (Simunic, 1980). Several other studies have used Simunic's (1980) model to explain various aspects of the link between audit fees and auditee attributes.

Prior research has shown that the increase in a client's complexity and risk are associated with higher fees paid to statutory auditors (Hay, Knechel, & Wong, 2006). The move to IFRS increases client's accounting and reporting complexity and the resources needed for preparing of the financial reporting. Although it is known that complexity and risk in general increases fees, it is mainly unknown how IFRS transition affects audit fees. This paper looks into the fees paid to statutory auditors associated with the companies who implement IFRS for their first time. This study will mainly use Simunic's (1980) audit fee model and builds on other factors to determine the audit fees level with the presence of IFRS (Griffin & Lont, 2007)

2.4 Empirical Review

Numerous academic literature has investigated the economic consequence of major accounting regulatory reforms on financial reporting. Several Studies have examined the impact of changes in statutory laws on accounting and corporate governance regulations on auditing since the pronouncement of Sarbanes-Oxley Act in 2002 in US and Corporate Law Economic Reform Program Act of 2004 in Australia. Following the promulgation and passage of the Sarbanes-Oxley Act in the United States in 2002, Ghosh and Pawlewicz, (2008) and Griffin et al. (2009) reported an increase in auditing fee. In a similar fashion Salman and Carson (2008) studied the impact of Corporate Law Economic Reform Program Act of 2004 (CLERP 9) on Australian company audit fees, found a sharp rise in the audit fees following the enactment and adoption of these reforms.

The adoption of IFRS worldwide is possibly the most far-reaching public prominence and confining regulatory reforms ever seen. IFRS is perceived to cause a transformation in financial reporting regime that leads to increased information disclosure (E. Dodzi, 2015) and other studies reported similar findings (Ghosh & Pawlewicz, 2008; Griffin et al., 2009; Salman & Carson, 2008). Studies that analyzed the effect of IFRS adoption on auditing suggest that the implementation of these new standards come with significant cost implications attributable primarily to the resultant increased in audit effort and audit risk (Kim et al., 2012; De George et al. 2013; Jermakowicz & Gornik-Tomaszewski, 2006; Choi & Yoon, 2014). Also, Lyubimov (2013) identified incremental audit effort and audit risk induced by the regulations, and concluded that audit effort and audit risk as the major audit fees drivers.

The application of IFRS like The Sarbanes–Oxley Act of 2002 (SOX) demand greater exertion from auditors. Much effort demanded from auditors in that IFRS are more principle oriented,

and are based on fair values which is more challenging relative to the local GAAP, which are based on rules and historical cost, which call for difficult estimations and higher professional judgment from auditors. The adoption of IFRS is expected to be more costly during the year of transition as a result of the greater effort, knowledge, skill and competencies needed to implement the new standard (De George et al., 2013).

In his research with Australian companies, De George et al. (2013) found that audit fees increased by 23% in the transition period to IFRS in Australian companies. In this period, adoption was optional until companies fully prepared for the disclosure requirement. Furthermore, He suggested increase in the audit effort governed by two main factors. Firstly, in the year of the adoption of IFRS the auditors will make greater efforts to become aware of the new standards, so that they can evaluate if these standards have been implemented in an adequate manner. Auditors are likely to attempt to recover the cost of this increased effort by increasing audit fees. They expected the increase to be recurring, if the extra audit effort under the IFRS reporting regime continues, because the auditors are certifying more financial information necessitated by the increased disclosure requirements of IFRS which, are more detailed and lead to more disclosure than previous local GAAPs. They reported that the first-time IFRS-compliant annual reports were about 60% longer than the previous annual reports (De George et al., 2013).

Secondly, increased efforts due to the implementation of IFRS derives from standards that require a fair value measurement on certain balance sheet items which increases the exercise of professional judgment, discretion and subjectivity in the financial reporting process. Furthermore, the effort is even more greater in African countries facing the challenge of the absence of a liquid market (Ball, 2006; Roger, Jay & Jeffrey, 2006).

In the absence of a liquid market, the auditors should use a different approach and gather more information to assess the credibility of management estimates. This may give rise to the risk of material misstatement in the financial statement due to management manipulation, erroneous reporting, and as a result, ultimately, audit failure (Litigation risk). In order to manage these risks the auditor will charge higher audit fees. In general, expected legal liability depends on several key factors including the probability of material misstatements in the financial reports, the probability that the audit would fail to detect the misstatement, and the probability that the auditor would incur a legal liability due to an audit failure (Choi & Yoon, 2014).

Kim et al. (2012) in their study they made two competing theoretical assumptions about how the adoption of IFRS affects audit fee. On the one hand, they argue that the use of IAS/IFRS as opposed to previous Chinese GAAP, are principle-based and fair value oriented standards with greater disclosure requirement makes it complex therefore, it entails higher level of judgment and greater effort from auditors will be required; this is likely to be reflected by higher audit fees. On the other hand, as proponents claim it, IAS/IFRS may improve the quality of financial reporting, therefore it may lessen the occurrence of material misstatement in the financial statements, which consequently lowers both audit effort and audit risk (expected liability costs), which in effect should reduce audit fees (Kim et al., 2012).

Kim et al. (2012) further observed that the audit fee in the year of adoption is mostly higher compared to the subsequent years, which they attributed to the time and effort taken by auditors to learn the new standards and additional audit effort required to review the comparative financial statement arising from the retrospective application of the new standard (Kim et al., 2012). Similarly, Cameran and Perotti (2014) in their study on auditors' fee determination on the adoption and transition to the international accounting standards (IAS/IFRS), they made an interesting conclusion in line with the findings by Kim et al. (2012) that IFRS could impact

audit fees in two main ways, in the first place, incremental effort is demanded from auditors, which is expected to result in higher audit fees. Alternatively, if IFRS enhances the transparency of the financial statement resulting in lower inherent risk then lower audit fees is likely to be charged. This conclusion by Cameran and Perotti (2014) was based on listed and non-listed Italian banks from 1999 to 2006 and the outcome reveals that audit fees paid by the banks were much higher after implementing IFRS.

Hart, Rainsbury and Sharp (2009) examined the impact of IFRS adoption on audit fees in the private sector firms in New Zeeland and reported that audit fees of the companies increased by 48% in the two years prior to adoption of IFRS and in the year of the adoption. Consistent with Griffin et al. (2008), a study found that audit fees of New Zeeland companies increased in the period 2002–2006 and that the increase was associated with the transition to, and adoption of IFRS in New Zeeland.

2.4.1 Variables

In line with Simunic (1980), different scholars found that the size, the complex nature of the auditee, and audit risk largely influence total audit fees paid. In addition, Lyubimov (2013) found that auditor size and changes in regulatory environment are important factor that influence the audit fees. Therefore, it is important to look into the factors that could influence the audit fees paid by auditee firms specifically. The following are summaries related with the factors such as size of the auditee firm, complexity of audit firm operations, risk associated with a client's operation and size of the auditor respectively.

2.4.1.1 Size of the Auditee

Prior studies on audit fees have found that the size of the company is the most critical determinant of fees (Beattie, Goodacre, Pratt, & Stevenson, 2001; DeAngelo, 1981; Friis & Nielsen, 2010; Simunic, 1980). Simunic (1980) argues that audit of bigger firms require extra audit tests and procedures, more effort and time to test and analyze the company's large data and information. Jung, Kim and Chung (2016) ranked size as the most dominant and influential control variable, which accounts for over 70 percent of all variations in audit fees following a detailed analysis of existing studies on audit fees. By increasing the auditee size, an external audit service required to carry out extensive inspection work to ensure proper compliance and material testing. The size of the auditee is one of the most important factors affecting auditing effort in large companies. Natural logarithm of total assets of the firm is considered as the size. Furthermore, Ling et al. (2014) found that the audit fee to be positively related to the size and complexity of the company. The results of their empirical study revealed that company size affects the scope and size of the audit work, especially if it involves some troublesome areas, such as stocks, debtors, creditors. They claimed, both size and complexity have substantial effects on audit fees, the results of his regression model displayed high value of the adjusted R- square, which indicated that 90% of the variation in audit fees is explained by both size and complexity of the company. It was also found that company size has stronger influence on audit fees than its complexity, based on both the correlation coefficient and the adjusted R square values (Ling et al., 2014).

2.4.1.2 Complexity of the Auditee's Operations

Typically, it is believed that the more complex the operations of the auditee, the more difficult and time consuming it is for auditors to undertake such audit (Hay et al., 2006; Simunic, 1980). Ling et al. (2014) claim that in addition to the scope and size of the audit work, audit fee is

influenced by the complexity of the company, Complexity consists of two main aspects; the level of decentralization and diversification of the financial reporting entity (Ling et al., 2014).

The degree of decentralization and diversification determines the number of decision centers in an organization whose activities need to be monitored. Researchers as indicators of complexity in audit fees models have adopted several variables. Typical among them include the number of subsidiaries which determines the level of decentralization, the number of foreign subsidiaries, the number of business segment, the proportion of foreign assets, principal industry of the client, the nature and structure of the assets such as inventories and receivables etc. Ling et al., (2014) found that complexity explains about 14% of the variation in audit fees.

Correspondingly empirical evidence shows that complexity of auditee's operations is an important variable, which strongly influences audit fees. Complexity and audit fees are mostly reported to be positively associated. The greater the complexity of the auditee, the higher and extensive auditing procedures needed to be performed to review the transactions, which increases the audit fees (Hay et al., 2006).

2.4.1.3 Risk

Simunic (1980) revealed the increased risk for inspection by the client is positively associated with a large auditor of an external audit firm. In order to minimize audit risk, auditors usually follow a risk-based approach to auditing. This involves auditors assessing the risks associated with the client's business, transactions and systems, which could result in material misstatements in the financial statements. This approach helps them to focus more attention and resources on areas that present potentially greater loss exposure. Therefore, the level of perceived risks associated with a client's operation determine the degree of audit effort to devout and the specialized type of audit procedures to adopt. Several measures of risk including

inherent risk, liquidity risk, capital risk etc., have been considered by researchers. Furthermore, unavailability of capital market in Ethiopia amplifies the issues related to fair value measurement requirements. This has a dual effect on both auditors level of effort and possibility of litigation risk (Simunic, 1980).

Choi et al., 2010 investigate relations between legal liability regime, audit quality and audit fees. They find that the strictness of a country's legal liability regime is an important fee-increasing factor. The Ethiopian Financial Report Proclamation No. 847/2014, besides pronouncing the adoption of International Financial Reporting Standards (IFRS), the Council of Ministers Regulation No. 332/2014 established AABE with the main purpose of improving the quality of audits and enforce professional standards, in effect it makes the Ethiopian auditing environment stricter than it was before (AABE, 2015). According to Choi et al. (2010) strictness of the regulation have an increasing impact on fees. Therefore, the creation of the AABE could have increased the quality control requirements imposed on audit firms and these quality requirements might have forced the audit firms increase the audit effort to minimize the possibility of potential litigation against the audit firm,. All else equal, increased quality requirements could lead to higher chances of audit failures, which could in turn lead to litigation. Nevertheless, the effect of such change have been nullified by selection of study period similar with the establishment of ABBE. As such audit firms have higher liability after IFRS, which could lead to an increase in the work performed by auditors, controlling for the effects of AABE (Choi et al., 2010).

2.4.1.4 Size of auditor

Lyubimov (2013) studied the size of the auditor and its impact on audit fees after the SOX and his study noted two theoretical perspectives on why SOX would have a differential effect on

the fee changes by the Big 4 versus non-Big4 firms and they lead to opposite predictions namely: investment in quality and market structure arguments.

i. Investment in Quality

This perspective centers on the argument that the Big 4 fee premium is driven by the decision/need to invest in higher quality auditing. According to this perspective, it is argued that the Big 4 always has higher quality controls than the non-Big 4 companies (Lennox, 1999 cited in Lyubimov, 2013). Therefore, SOX, which requires higher quality and more costly audits, is predicted to have a relatively less effect on the fees of the Big 4 firms than on the fees of the non-big 4 firms. In this case, both Big 4 and non-Big 4 firms need to improve their quality levels. However, the Big 4 will have to improve by a smaller amount on average, less than that required by non-Big 4, it should therefore require a smaller increase in effort and cost on the part of Big 4 firms. This, in turn, should lead to smaller fee increases for Big 4 than non-Big 4 firms after SOX (Lyubimov, 2013).

Along these lines, Choi et al. (2008) examined the impact of a legal liability regime on audit fees internationally. Within any given legal liability regime, Big 4 auditors charge higher audit fees, but the Big 4 premium declines as countries' legal liability regimes changed from weak to strong. The impact of legal regimes on audit pricing and Big 4 premium is more prominent for small and medium-sized enterprises than for large companies. They argue that regardless of the regulatory system, Big 4 companies have more resources available, and they can use those resources to make greater efforts, which is likely to result in higher quality audits (Choi et al., 2008). Simultaneously, the existence of greater resources also increases the likelihood that that these auditors will be viewed as a source of “deep pockets” in case of an audit failure. (Lyubimov 2013)

The increased risk of litigation would provide an additional incentive to provide high quality audit services. These two factors combine to give the big 4 audit firms high quality even in the SOX environment. Under this argument and the Big 4 is expected to perform high quality audits under all regulatory regimes. As a result, there is less need to change the burden following the introduction of IFRS. Hence, Big 4 companies are expected to charge relatively lower fees for the audit. With regard to companies that are not large, 4 this perspective also focuses on the resources available to carry out high quality audits. In particular, non-Big 4 companies have fewer resources to consider and invest in the Big 4, which will probably lead to lower quality testing at the Big 4. Previous research has provided evidence in line with the claim that the Non-Big 4 companies have a lower quality test **(**Lennox, 1999 cited in Lyubimov, 2013) and therefore a higher probability of an audit failure.

This perspective focuses on the assumptions that while all companies would need to increase their efforts after the application of IFRS, non-Big4 firms would be required to make a relatively greater increase in effort to achieve minimum expectations of regulatory body. In line with the findings of Choi et al. (2008); De George et al. (2013) showed that the increase in audit fees is high among small businesses in Australia. It is assumed that non-Big 4 firms need to have a relatively greater effort, as they work to catch up to the enhanced quality expectations brought about by the application of IFRS. This view suggests that non-Big 4 firms will increase the fees more than the Big4 after the introduction of IFRSs (De George et al., 2013).

ii. Market structure arguments

On the contrary, market structure theory views differently, based on the arguments of the market structure and the role played by such a structure in competition and pricing. The argument is built on the existence of a bifurcated market for audit services. According to Lyubimov (2013), in one market segment dominates an oligopoly, while in the other segment, producers face a more competitive structure. These differences in market structure and competition have implications for the pricing of the audit Services. In terms of the structure of the market, the upper end of the market is characterized by the dominance of big-4 companies, the market for smaller clients is not as highly concentrated (Lyubimov, 2013).

Simunic (1980) suggested the audit market can be characterized as being comprised of two distinct segments: one more oligopolistic and the other more atomistic in nature. In the first case only four huge providers of the Big 4 audit service dominate the segment, which consists of large clients, thus, it is oligopolistic. The atomistic segment refers to the medium and especially the small client segment where there are many more audit firms and thus the non-Big 4 or any other provider are likely to have less pricing power. The economics of market structure posits that the firms in an oligopoly are price setters, as opposed to price takers. One of the main concerns related to the oligopolistic market structure is a possibility of tacit collusion, a type of collusion in which several firms in an industry coordinate their production and pricing decisions by observance of each other's competitive actions and responses (Lyubimov, 2013).

As such, the structure of the oligopolistic segment of the audit market fits the characteristics of an industry where tacit collusion can take place. This is relevant to pricing because tacit collusion has been shown to lead to abnormally high prices (Friis & Nielsen, 2010). This leads

to an assumption that audit fees would be increasing at a higher rate in the oligopolistic segment of the market. Further, since this segment is presumably dominated by price setting on the part of the Big 4 firms, fee increases would be higher for the Big 4 than non-Big 4 firms. Lyubimov (2013) claims that SOX changed the regulatory regime and increased legal liability of all accounting firms and hypothesized that the associated potential legal liability costs will be higher for the Big 4 firms because they have more resources to pay legal settlements.

Furthermore, DeAngelo (1981) claimed that the Big 4 have higher reputations at stake in case of any audit failure. As such the Big 4 firms could be expected to increase their effort more than non-Big 4 to avoid any possible litigation; increased effort is expected to lead to increased audit fees. As such, this view suggests that after the adoption of IFRS, the Big 4 would increase audit fees more than non-Big 4 (DeAngelo, 1981).

Lin and Yen (2016) found that the increase in audit fees for Big4 customers is much larger after the introduction of IFRS in China. Consistent with Lin and Yen (2016) as well as Choi and Yoon (2014) showed that audit fees charged by Big4 after the introduction of IFRS in South Korea have increased significantly. Risheh (2014) showed similar results among Jordanian listed companies. One possible reason is that non-Big4 audit firms lack the competence to extend professional judgment and the need to extend more effort than the Big4 dealing with the complexity of IFRS.

Konadu (2018) argued that in developing countries, the Big 4 are always seen as superior in providing quality auditing services to multinational and large companies. In addition, local companies in developing countries usually lack professional workers and work experience, so they cannot compete with Big4. It is clear that companies in developing countries cannot enjoy the services of the Big4 without the necessary concomitant of high audit fees. Due to the intense

competition over the few large non-multinational companies, non-Big4 firms attempt to bargain on how to stay in business. Consequently, Africa being a developing continent provides a more competitive advantage for the Big4 in terms of audit prices (Konadu, 2018).

In the first assumption as soon as the regulatory regime has changed, IFRSs have increased legal liability and the risk of controls / sanctions has led the AABE to stricter auditing requirements. Under these new conditions, non-Grade A firms have to make major adjustments to increase the quality of their audits and reduce the risk of litigation. This raises the possibility that GradeA companies will have to slightly increase their efforts to carry out higher quality jobs, leading to a slight increase in fees.

While the second assumption claims that the local companies in developing countries usually lack professional workers and work experience, so they cannot compete with big 4 firms, hence, the big4 firms have the bargaining power in setting prices. In addition The big4 firms have higher reputations at stake in case of any audit failure and the fact that potential legal liability costs will be higher for the Big 4 firms pressure them to exert more effort than the counterpart non-big 4 hence the resultant audit fee will be higher.

CHAPTER THREE

METHODOLOGY

3.1 Overview

This chapter addresses the overall research design, the execution strategy and the methodological approach followed in conducting this study. It entails the research paradigm, the sample design, the empirical research models and the method of data analysis applied in the study.

3.2 The Research Design

The research design defines how a study is designed, conducted and how the results are translated to capture and clarify the phenomena based on ontological and epistemological positions. The relevance of the research design in academic research is that it provides scientific orientation and guidance on selection criteria, according to which all issues, strategies and methods can be adequately legitimized. Therefore, the study used correlational research design with quantitative data collection and analysis to examine the impact of the adoption of IFRS on audit fees. As part of the strategy selection, the study used audited financial statements of banks which is publicly available on the banks' website. In addition to this supplementary data was extracted manually from the published annual reports and the panel regression analysis used to analyze the data.

3.3 Sampling Design

3.3.1 The Target Population

The study is aimed at Ethiopian Financial Institutions specifically the banking industry. One benefit of using data from a single industry is that the analysis does not suffer from the industry effect problem (Ajekwe & Ibiamke, 2017; Cameran & Perotti, 2014). Selection of the banking industry is influenced by different reasons, however, due to that all Ethiopian banks are obliged to use IFRS in their annual accounts. This allows to examine the impact of adopting IFRS in a dataset regardless of size of the bank. Therefore, the population of the study is all commercial banks, private and public, operating in Ethiopia.

A further interesting specificity is that the banking sector is highly regulated towards selection, appointment and termination of audit firms by the bank. According to the national bank of Ethiopia directive SBB/19/96 3.2(C) the auditor is not allowed to represent the bank either directly or indirectly. Thus, in general, the extent of audit fees paid is not significantly influenced by the possibility of obtaining or maintaining the audit engagement for other non-audit services.

In order to conduct a pre, conversion and post IFRS adoption impact analysis, the sample selection covers firms within the target group with at least two years operational existence in Ethiopia prior to the year 2016.

The year 2016 marked the official year of the introduction of IFRS in Ethiopian financial institutions and large public enterprises. The Accounting and Auditing Board of Ethiopia (AABE) announced a three stage Roadmap to IFRS Implementation in Ethiopia in 2015 that Significant Public Interest Entities and all Financial Institutions and public enterprises owned

by Federal or Regional Governments of Ethiopia were required to convert its closing balances at June 30, 2016 to IFRS-based figures which then become the opening balances as at July 1, 2016 for IFRS-based financial statements as at June 30, 2017.

This means that according to the roadmap, all financial institutions and government owned (Federal and Regional) public enterprises in Ethiopia will statutorily be required to issue IFRS based financial statements for the financial year ending July 7, 2018 making 2016/17 as comparative year

3.3.2 Sampling Technique

According to Edmond (2016), it is impossible to study everybody everywhere and do everything when conducting research. He also posit that, it is virtually unattainable for researchers to gather data from all categories being investigated. Therefore a researcher must endeavor to obtain evidence from a section of the population through a sampling technique.

In order to conduct a pre- and post-IFRS adoption effect analysis, the study employed purposive sampling technique in the selection of firms for the study. Eventually, 17(seventeen) commercial banks that satisfy the aforementioned requirement selected, one bank with incomplete set of annual reports were excluded from the sample. Data was collected on each sample firm over the study period. This constitutes eighty (80) firm-year observations covering a period of five (5) years from 2014 to 2018.

3.3.3 Sample Size

The population for this study is made up of all the commercial Banks operating in Ethiopia as at June 30, 2018. The sample size encompasses firms in financial sector. Presently there are 20 banks in Ethiopia out of which 18 are commercial banks. Thus, with the exception of the Commercial Bank of

Ethiopian (CBE), 17 commercial banks has been included in this study. The CBE has been excluded from the sample due to that yearly financial report of the bank has not been available for selection.

3.4 Study Period

The study covers five-year period from 2014 to 2018. The choice of this period is motivated by several reasons; first, by the need to conduct an analysis of pre- and post-IFRS adoption effects. In Ethiopia following the Financial Report Proclamation No. 847/2014; banks' started adopting IFRS in the years 2016 and 2017, and prepared first full IFRS compliant financial statement in the year 2018; However the conversion period is known for its complexity for and high costs (P. A. Griffin et al., 2009; Hart, Rainsbury, & Sharp, 2009) therefore, the impacts of adopting IFRS will be reflected on Audits fees not only in the year of adoption but also in the conversion periods too; hence in order to conduct the Pre- and Post IFRS analysis and to inspect the accurate change; the period starting from 2014 will be used as the study period. The other major reason is that the establishment of the regulatory body AABE in the year 2014 is believed to have impacted the auditing environment. To satisfy the quality requirements of AABE, all audit firms increased their efforts; as a result they might have also increased the audit fees. Therefore to control the effect of change in regulatory environment, the study period matched with year of AABE establishment; therefore all the years studied (2014-2018) are of the same level of regulatory requirement complexity. Similar studies in other jurisdictions used study periods ranging from two (2) to seven (7) years. Europe (Kim et al., 2012), Australia (De George et al., 2013), Finland (Vieru & Schadewitz, 2010), Malaysia (Yaacob & Che-Ahmad, 2011), Ghana (E. Dodzi, 2015).

3.5 Data Collection Procedures and Data Source

3.5.1 Data Collection Procedures

Data was manually extracted from annual reports of banks and using MS excel the data was classified, summarized and exported to the Stata and SPSS software for further analysis.

3.5.2 Data Source

This study used secondary data; the audited annual financial statements of banks selected for the study. The data is gathered from the audited annual financial statements of the selected Banks over the study period. Audited Annual reports of sampled Banks from 2014 to 2018 was downloaded in soft copy format from the banks official website. However, audited annual reports of some banks were unavailable online, in such instances hardcopy documents were obtained directly from the banks or other sources.

Although the study is dependent solely on secondary data drawn from financial statements of banks; this source is regarded as objective, reliable, unobtrusive and free from response biases from individual respondents in the case of interviews and questionnaires.

Apart from these advantages the regulatory framework governing the preparation of company annual reports helps ensure that the annual report is a reliable and attested public document. The downside associated with this source of data is that the researcher has no control over the quality of the data (Edmond, 2016). In an attempt to authenticate these documents, data was only obtained from official website of the banks or directly from the banks.

3.5.3 Population Inclusion Criteria

The inclusion criteria of sample is based on the banks satisfying the following requirements; Commercial bank operating in Ethiopia; Operational existence since 2014; adopted IFRS as

per the AABE roadmap; and that provided complete set of relevant data. The key criteria for selection was that banks which hitherto prepared their annual financial reports in accordance with the historical cost convention, generally accepted accounting principles and the laws and regulations of Ethiopia including the Commercial Code of Ethiopia 1960, Banking Business Proclamation No. 592/2008 and the Directives of the National Bank of Ethiopia for at least two years before switching to the use of IFRS with continued operational existence throughout the study period (2014-2018). Based on this all 18(eighteen) commercial banks were planned for selection, but on further refining of data availability the CBE has been excluded due to incomplete publicized annual reports.

3.6 Research Model

In relation to the first objective and to test the first hypothesis, the study adapts the conventional audit fee regression model developed by Simunic (1980) which has been adopted, modified and used in several prior audit studies (Cameran & Perotti, 2014; Choi & Yoon, 2014; De George et al., 2013; Griffin et al., 2009; Kim et. al., 2012; Vieru & Schadewitz, 2010). These studies guide the selection of variables used in the model. To analyze the effect of the test variable (IFRS) the researcher compared audit fees during the pre and post IFRS using an Independent t-test. To address the main objectives of examining whether IFRS adoption among the sampled banks has affected audit fees, the study employs panel regression analysis. Secondly, the researcher employed multivariate analysis to examine and explain the combined effect of size, audit task complexity, risk and IFRS in explaining the change in audit fee following IFRS adoption. To achieve this IFRS-indicator dummy variable was introduced into the regression estimation models for audit fees while controlling for other determinants in line with prior audit literature.

3.6.1 Specifications of Model Variables

In line with prior studies, the variables that would be considered for the estimation model and how they will be measured is discussed below.

3.6.2 Models for total fees paid to the statutory auditor

To examine the first hypotheses, Simunic's audit fee model is used to analyze whether the IFRS adoption is related to the total fees paid to auditors. in this research, fees for audit services is used as a dependent variable and fundamental variables such as auditee size, client complexity and client risks are used as control variables because these fundamental variables have significant impact on level of audit fees charged. (Edmond, 2016; J. B. Kim et al., 2012; Vieru et al., 2010).

However, the variables used in the Simunic 1980's model are insufficient to indicate the real impact of audit fees (Phang, 2015; Yaacob & Che-Ahmad, 2012). Hence the model is modified to include the changes in accounting and auditing regulatory environment.

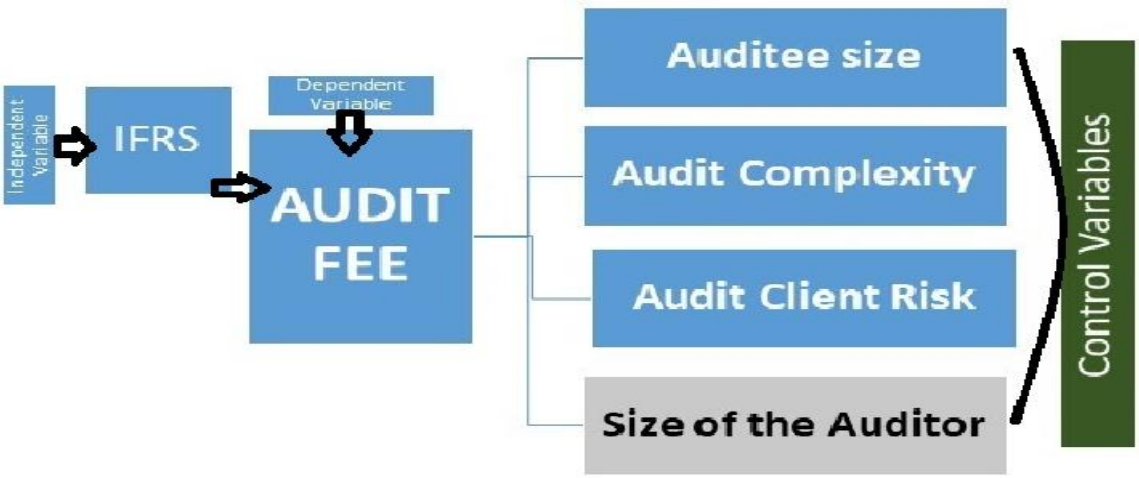

***Figure** 1 Audit fee model*

Empirical evidences show that systematic differences in audit fees exist among different audit firms. For example Dogzi 2015 has reported that big 4 firms' charge higher fees in many countries than that of non-big 4. In line with (Dodzi, 2015; Yaacob & Che-Ahmad, 2012), an indicator variable is included on the audit fee model to control the possible pricing or effort differences between Grade-A firms and non-Grade-A audit firms.

3.6.3 Audit Fees

In this research Audit fees mean all charges that the companies pay to the external auditors against the audit services. Other fees for non-audit services, like management advisory and consultation are excluded. Auditing fees consist mainly of the wages and benefits of office and field personnel, travel costs, and other costs necessary to the audit and related support activities. The fees equal the estimated cost of staff time and the actual cost of travel for those activities, plus margin of profit. Total audit fee is a dependent variable in the estimation model. The natural logarithm of audit fees (AF) will be used to in line with prior studies (Fields et al., 2004 Griffin et al., 2009; Kim et. al., 2012; De George et al., 2013; Vieru & Schadewitz, 2010; Choi & Yoon, 2014; Cameran & Perotti, 2014).

Therefore, the empirical model for this study is based on previous analysis models by Cameran and Perotti, (2014) and De George et al. (2013); while specifically this model relates fees paid to the size, complexity, auditor type, and the risk of the audit client considering the change in regulatory environment.

3.6.4 IFRS

The variable of primary concern, the IFRS variable, is a dummy variable given the value 1 if the financial statement comply with IFRS and 0 otherwise. The variable is measured by

reading the introduction to the note specifying accounting practice. Here it is stated whether the accounts are prepared according to IFRS standards or in accordance with generally accepted accounting principles on historic cost convention and the laws and regulation of Commercial Code of Ethiopia 1960, Monetary and Banking proclamation No 83/1994, and supervision of Banking Business proclamation No. 592/2008 and the directives of the National Bank of Ethiopia.

A number of banks made a successive transition to IFRS during the years 2016 and 2017. During that period their financial statements are registered as being prepared in accordance with the generally accepted accounting principles on historic cost convention and the laws and regulation of Commercial Code of Ethiopia 1960. In this study IFRS compliant financial statement is where the notes to the financial statement explicitly specify that the financial statements are prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB").

Based on prior research it expected that IFRS will have a positive association with audit fees.

The following control variables is considered:

3.6.5 The Size of an Audit Client Company

Previous studies have frequently indicated that the most important variable in explaining the level of audit fees is the size of the auditee. In these studies the company size is assumed to be related to the need for more time, resources and effort in preparing, analyzing and testing the company information before the issuance of audit opinion (e.g. Simunic 1980; Palmrose 1986; Davis et al.1993; Bell et al.2001; Chung and Narasimhan 2002; Cobbin 2002). In Cobbin's

(2002) survey of auditing literature, the size variable is always reported as a significant and positive determinant of audit fees.

To capture and measure company size, financial statement items such as the natural logarithm (log) of total assets or turnover is often prominently used as a proxy variable. In this study the natural logarithm log of ending total assets is used as proxy for auditee size (SIZE). This measure is more widely used. All things being equal, the larger the size of the bank the higher the audit fee (Lin and Yen, 2009). The study therefore predict a positive coefficient on SIZE.

3.6.6 Audit Complexity

The results of many earlier studies support the idea that the client's complexity is a significant variable in determining the level of audit fees (Simunic 1980; Niemi 2002; Whisenant et al. 2003; Nikkinen and Sahlström 2005; Joshi and Al-Bastaki 2000)

Vieru and Schwartz claim that the complexity of the auditee increases the need to spend time and conduct larger and deeper testing procedures and analyses.

The complexity can be related to asset structure and business operations often it is controlled using two commonly used variables: 1. the ratio of the accounts receivable to total assets or the ratio of loans and advances to total assets in case of banks (REC) and 2. The square root of the number of Branches (SQBRA). For complexities in asset structure and business operations respectively

Simunic (1980) and Francis and Simon (1987) suggest that receivables and inventories require subjective judgment and consume more time in determining their values and, accordingly, are difficult and risky to audit. Complexity increases also if the company has numerous subsidiaries and other entities within the group (Simunic 1980).

In this study and in line with Griffin et al (2009), Vieru and Schwartz, Kamal Naser Rana Nuseibeh, (2008) auditee complexity is captured using the ratio of accounts receivable to total assets (REC). Since high number of receivables present higher complexity for auditors and the fact that IFRS7 (Financial Instruments) and ISA 3301, ISA 500.2 requires the auditor to assess the provisions made for receivables and make conformations on the outstanding receivable balances, it requires longer time; and the increase in number of branches present higher complexity for auditors for the fact that the auditor needs on a sample basis review the internal control system on branches and make annual counts and reconciliations with head office present a greater complexity for auditors. Therefore, it is expected that number of branches and amount of loans and advances will be positively associated with the dependent variable audit fee.

3.6.7 Risk

Audit risk is also an important element in determining the level of audit fees (Simunic and Stein 1996; Pratt and Stice 1994; Bell et al., 2001). According to Vieru et al., (2010), risk can arise in different ways. The risk component is related to the auditor's potential future loss due to the possibility of litigation or a client's failure. Audit risk can be defined as the risk that financial statements may be materially misstated after the audit is completed and an unqualified opinion issued (Arens and Loebbecke 1994). Audit effort and audit risk are related since auditors address some forms of business risk by increasing audit effort, which in turn causes higher audit fees. This implies that the higher the anticipated audit risk the more numerous the

audit tests perceived as necessary. In addition, a higher fee is required to compensate for the greater anticipated risk of audit failure.

Risk variables are controlled for using profitability risk measures, liquidity risk measures and financial risk measures.

Client profitability: Client profitability reflects the extent to which an auditor may be exposed to a loss in the event a client is not financially viable and eventually fails (Simunic, 1980). Poor profitability and high level of variability in profits may lead to greater risk and greater amount of audit work. Companies that report losses in the recent period's financial statement may influence the auditor's judgment of risk. The poorer the performance of the firm, the higher the risk for the auditor and the higher audit fee would be expected. On the other hand, some researchers argued profitable firms have more transactions related to the income and expense accounts thus the auditor need more time and effort to inspect those accounts, leading to a higher audit fee (Naser et al. 2007). Studies use various measures for profitability for example; (Simunic 1980; Ireland and Lennox 2002; Caneghem 2010) used current period loss and find significant relationships. Others e.g. (Ebrahim 2010; Afesha 2014) using ROA reported profitability significantly influence audit fee. In this study only ROA is used to measure banks profitability for the fact that all banks under study did not report loss during the study period. A direct relationship between banks profitability (ROA) and audit fees expected.

Liquidity risk: Liquidity risk relates to the possibility that the bank cannot meet its obligations for cash through the clearing system or from its depositors. Fields et al., (2004) noted that banks with large numbers of transactions accounts necessarily have much more complex activities

that are costly to perform and monitor; one of the famous ratios of liquidity is current ratio; current ratio measures liquidity as a proportion of current assets and current liability (CR).

Afesha (2014) measured liquidity risk as the relationship between liabilities with a maturity of less than one year to those with a maturity of more than one year. In this study liquidity is proxy by current assets to current liability and demand deposits to total deposits. Based on the above arguments liquidity risk as measured by *LIQ* and *CR* is expected to have a positive relationship with audit fees in this study.

Financial risk: Financial risk relates to the possibility that the bank cannot meet its long term fixed financial obligations. It is a key measure of business solvency, it shows how the company is leveraged or it measures the assets of a company relative to its liability. In this study leverage *(LEV*) is computed as the ratio of debt to total asset, lower debt ratio suggests the company is less leveraged and has strong equity position. Hence it is expected to have a positive relationship between financial risk and audit fee.

3.6.8 Auditor Type

Studies on the determinants of audit fee have found evidence of a large audit-firm (Big 4) tendency to charge fee premium this premium has been interpreted as an indication that large audit firms, considered as a group, receive higher fees than non-Big firms because they are perceived to provide higher quality audit services (Simon, and Francis, 1988). Similarly Craswell et al., (1995) found that specialist Big 8 auditors earn a 34 percent premium over non-specialist Big 8 auditors. To identify the biggest audit firms in this market, there are different ways which could be used, such as the firm's number of partners, number of firm's BIG clients, the firm's average fees, and the profitability per partner etc. But unfortunately such information is not publicly available. The criterion used in this study is the grade of audit firms as published

by The Office of The Federal Auditor General (OFAG) with effect from July 2014. To control for the potential effect of Grade A versus non-Grade-A auditors a dummy variable is used with a value of 1 if the current years audit is conducted by Grade-A auditors and 0 otherwise.

3.7 Empirical Estimation Models

The study adapts audit fee model used in previous studies. Accordingly the audit fee regression model to be used is specified as:

$AF_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 REC_{it} + \beta_4 CR_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 LIQ_{it} + \beta_8 GradeA_{it} + \beta_9 SQBRA_{it} + \varepsilon$ .....eqn (1)

Where,

AFit represents natural logarithm of the audit fees of bank i for year t

IFRSit represents a dummy which takes a value of 1 if the audited financial statement of bank i for year t is IFRS compliant, 0 otherwise

SIZEit represents the natural logarithm of total assets for bank i for year t

RECit represents the ratio of total loans and advances to total assets for bank i for year tCRit represents the ratio of current assets to current liabilities of bank i for year t

LEVit represents the ratio of total liabilities to total assets of bank i for year t

ROAit represents the ratio of net income to beginning total assets of bank i for year t-1

LIQit represents the ratio of demand deposits to total deposits of bank i for year t

GRADEA$_{it}$ represents a dummy which takes a value of 1 if auditor of bank i for year t is a GradeA Auditor, 0 otherwise

SQBRAit represents the square root of the number of Branches for bank i for year t

ε represents the error term

3.8 Method of Data Analysis

In relation to the first objective and to test the first hypothesis, the study adapts the conventional audit fee regression model developed by Simunic (1980) which has been adopted, modified and used in several prior audit studies (Griffin et al., 2009; Kim et. al., 2012; De George et al.,

2013; Vieru & Schadewitz, 2010; Choi & Yoon, 2014). These studies guide the selection of variables used in the model. To analyze the effect of the test variable (IFRS) the researcher compared audit fees during the pre and post IFRS using an Independent t-test. Secondly, to address the main objectives of examining whether IFRS adoption among the sampled banks has affected audit fees, the study employed multivariate panel regression analysis to examine and explain the combined effect of size, audit task complexity, risk and IFRS in explaining the change in audit fee following IFRS adoption. To achieve this IFRS-indicator dummy variable was introduced into the regression estimation models for audit fees while controlling for other determinants in line with prior audit literature.

3.8.1 Resolving Methodological issues

3.8.1.1 Multicollinearity Problem

Multiple linear regression analysis is expected mainly to conduct collinearity diagnostics, which enables to detect inflated linear relationship that give two values—Tolerance and VIF (variance inflation factor) and both are related to each other in the way that tolerance is just the reciprocal of VIF. Tolerance, which is simply 1 minus that R^2, very low values of tolerance (0.1 or less) indicate a problem. Very high values of VIF (10 or more) indicate a problem. According to Gaur and Gaur (2009), once multicollinearity is detected in the model, the regression coefficients are likely to be meaningless. One may consider removing some independent variables, which are highly correlated to reduce multicollinearity or standardizing/transforming the predictor variables. A value of VIF higher than ten (or Tolerance less than 0.1) indicates the presence of multicollinearity (Gaur & Gaur, 2009). Besides, Vieru & Schadewitz (2010) suggests a variance inflation factor, VIF>10 as a guideline for serious multicollinearity.

Table-1: Multicollinearity Analysis Statistics

Variables	VIF	Tolerance*
SIZE	2.43	0.41
CR	2.42	0.41
LEV	2.32	0.43
REC	2.18	0.46
IFRS	1.24	0.81
ROA	1.22	0.82
LIQ	1.15	0.87
GradeA	1.13	0.88
Mean VIF	1.76	

Note: VIF- Variance inflation factor *****Tolerance = **1/ VIF**

The highest correlation among the independent variables in the audit fee model is achieved between SIZE and SQBRA with a positive coefficient of 0.84. By rule of thumb, a correlation coefficient above a threshold of 0.5 suggests possible existence of multicollinearity problem. Notwithstanding, literature argues that once the coefficient is not above 0.8, it indicates minimal multicollinearity which is not a threat (Apadore & Noor, 2013). As a result the SQBRA has been removed from the model due to the VIF (25) and Tolerance (0.04) values were outside of the accepted collinearity range. Therefore, in the current analysis, after removing SQBRA, the test results of collinearity values (refer Table-1) of minimum and maximum of each tolerance and VIF (1.13 - 2.43 and 0.88 - 0.41) respectively. This suggests negligible or no significant effect of multicollinearity problem among the variables on the results.

Based on the above results of VIF the revised model is stated as:

$$AF_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 REC_{it} + \beta_4 CR_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 LIQ_{it} + \beta_8 GradeA_{it} + \varepsilon \quad \text{.....eqn (2)}$$

3.8.1.2 Levene's Equality of Variances Test

In order to check the normality of the sample distribution Levene's test has been conducted. The output of the test ($F = 0.16$, $p=0.69$) ascertains the data of sample distribution is parametric that rejects the H0 (equality of means). Had it been the F-ratio statistically significant the data would have been tested using nonparametric test (refer Table 5 in chapter 4).

3.8.1.3 Normality

Also, to enhance the normality of the data and minimize the effect of anomalies in the data set, the natural lo

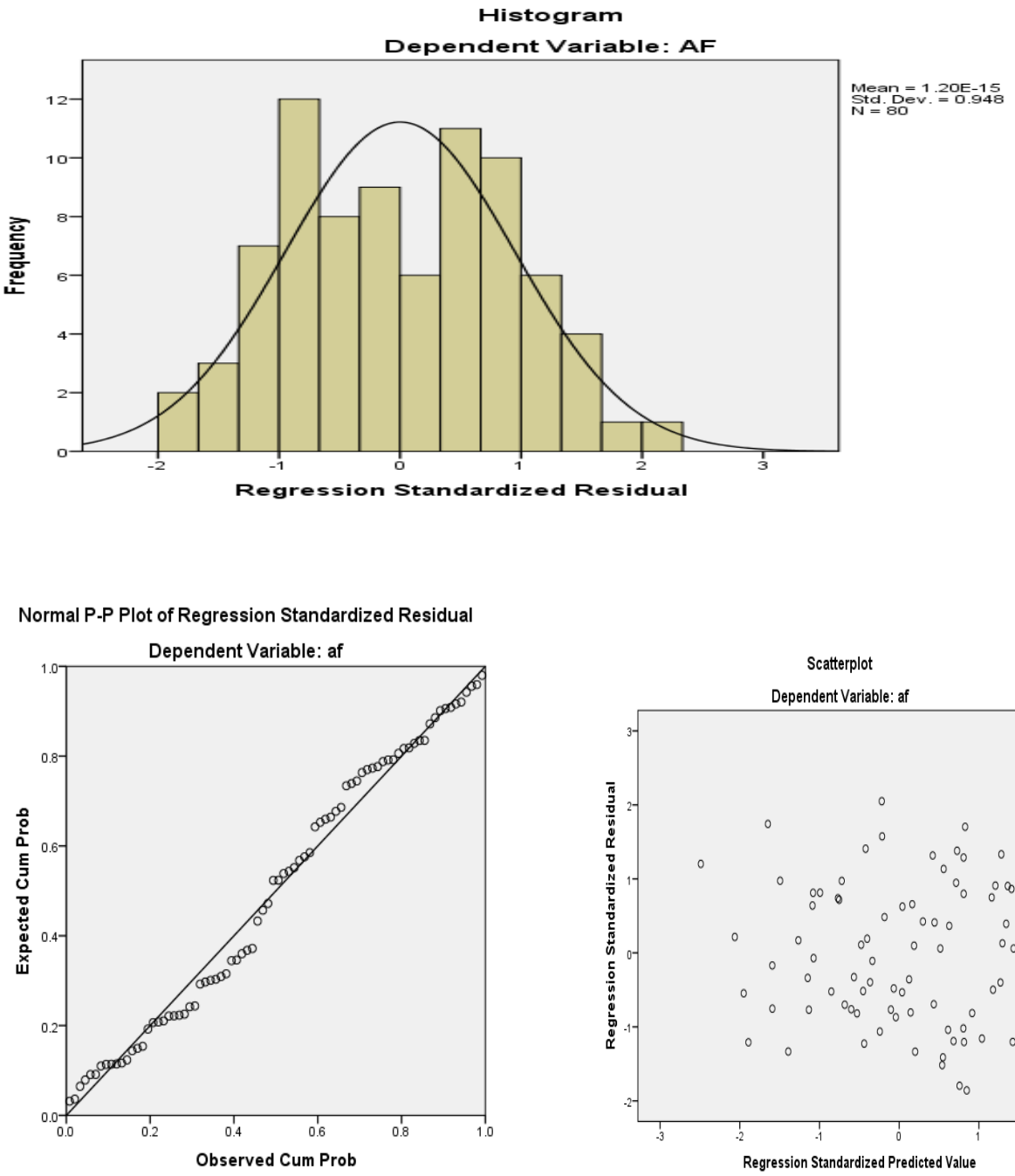

Figure 2 *Normality plots*

logarithm function is applied on audit fees, and company size (total assets). Furthermore, Size of audit firm Grade A is dummy in addition to the IFRS variable.

3.8.1.4 Haussmann's Specification Test

Multivariate regression analysis requires erogeneity of the independent variables. The problem of indogeneity occurs when an independent variable is correlated with the error term in a regression model. The Haussmann's specification test is conducted to determine whether correlation exists between the error terms and the explanatory variables, and to know the appropriate regression model whether fixed or random effect models to use. As indicated in Table 2 the results of the Haussmann's test suggests Random effects model if the p-value greater than 0.05, hence in this analysis Random effects model is used.

Table 2: Haussmann's Specification Test

	Coefficients			
	Fixed (b)	**Random (B)**	**Difference (b-B)**	**sqrt(diag(V_b-V_B)) S.E.**
IFRS	0.286	0.216	0.070	0.033
SIZE	0.162	0.292	-0.129	0.070
REC	-0.418	-0.967	0.548	0.297
CR	-0.355	-0.259	-0.096	0.046
LIQ	-1.100	-0.996	-0.104	0.400
ROA	-1.745	-1.047	-0.698	0.963
LEV	3.707	3.658	0.049	0.460
GradeA	0.179	0.124	0.055	0.032
chi^2 = (b-B)'[(V_b-V_B)^(-1)](b-B) = 6.44				
Prob>chi2 = 0.5984				
(V_b-V_B is not positive definite)				

3.8.1.5 Robustness Check

In statistical analysis, because residual errors resulting from using sample data in predicting parameter estimates are deemed to equate the true error in a population, it is important that the

population exhibits a random and an equal or constant variance across all observable units or elements within the population. Homoscedasticity alludes to the assumption that dependent variable(s) exhibit equal levels of variance across the range of predictor variable(s) so that the variance of the dependent variable being explained in the dependence relationship should not be concentrated within only a restricted range of the independent variables. Thus, the requirement of homogeneity of residual variances or homoscedasticity is critical to the proper application of many multivariate techniques such as multiple regression analysis. When the variance of the error terms appears constant over a range of predictor variables, the data are said to be homoscedastic. If the dispersion or spread of the variance is unequal across values of the independent variables or when the error terms have modulating variance, the data are said to be heteroscedastic. Heteroscedasticity or non-constant error term causes a problem in estimation as it renders the estimate values for the Adjusted R-square and F-statistic unreliable.

Therefore, to address inconsistencies that might exist in the data set resulting from autocorrelation and heteroscedasticity robustness check test has been conducted. To check for the possible presence of heteroscedasticity, tests like Cameron & Trivedi's decomposition of IM-test and Breusch Pagan Cook-Weisberg test for heteroscedasticity were conducted and in both cases the P-value is above the α level which otherwise would have rendered the regression results spurious, a robustness check is conducted using robust regression.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents analysis of the data gathered and a discussion of the results. The chapter entails the descriptive analysis of the summary statistics of the data, correlation analysis and the presentation and discussion of the regression results and findings.

4.2 Descriptive Analysis

4.2.1 Descriptive Analysis on Audit fees

The summary statistics for each variable used in the regression models are displayed in Table 3 below. In the regression analysis the natural logarithm of audit fees, and of total assets (SIZE) are used. The variables with minimum and maximum values of 0 and 1 respectively are dummies. The other remaining variables are computed as ratios.

Table 3: Variables Summary Statistics

Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
AF	80	12.1374	0.6654	10.6201	13.4225
IFRS	80	0.2000	0.4025	0	1
SIZE	80	22.9417	0.9609	20.5895	24.7355
REC	80	0.4765	0.0622	0.2929	0.6739
CR	80	1.1438	0.1913	0.1069	1.6142
LIQ	80	0.2883	0.0672	0.1501	0.4640
ROA	80	0.0336	0.0096	0.0034	0.0624
LEV	80	0.8459	0.0433	0.6900	0.9200
GradeA	80	0.6875	0.4664	0	1
AF_Birr	80	231,422	156,259	40,950	675,000

4.2.2 Annual Audit Fee Statistics

This section presents analysis of the audit fee data along pre and post IFRS adoption era. The statistics from table 4 below shows evidence of an overall increase in audit fee for the entire study period. The sampled banks on average, saw huge increase in the mean audit fees from ETB 185,732 in pre-IFRS adoption period to ETB 321,534 in the post adoption period representing about 73% percent compared to, a 25% increase in the mean audit fees from ETB 185,732 in pre-IFRS adoption period to ETB 232,057 in the conversion period and also there is a 39% increase in the mean audit fees from ETB 232,057 in the conversion period to ETB 321,534 in the post adoption period.

The statistics on audit fees have generally shown an increase in the average yearly fees. The year on year statistics show that the mean audit fees for the entire sample increase from ETB 176,464 in 2014 to ETB 321,534 in 2018. Thus, although fees have generally increased year after year, over the period of five years from 2014 to 2018 audit fees have increased by about 82%. The yearly swings in fees can be ascribed to a number of factors ranging growth and expansion in the size and operations of the banks to changes in general economic conditions.

Table 4: Annual Audit Fee Statistics

Panel A year to year summary

Over periods	Mean	Std. Err.	[95% Conf. Interval]	
2014	176,464.40	32,319.62	112,133.80	240,795.00
2015	194,998.80	33,869.22	127,583.80	262,413.70
2016	223,113.40	39,803.36	143,886.80	302,340.00
2017	241,000.60	38,177.67	165,009.90	316,991.40
2018	321,533.80	44,293.11	233,370.50	409,697.00

Panel B Periodic summary

Years	period	Mean Af_birr
2014-2015	pre	185,732.00
2016-2017	conversion	232,057.00
2018	post	321,534.00

Comparison	Diff in Birr	%change
pre Vs post	135,802.00	73%
pre Vs conversion	46,325.00	25%
conversion Vs post	89,477.00	39%

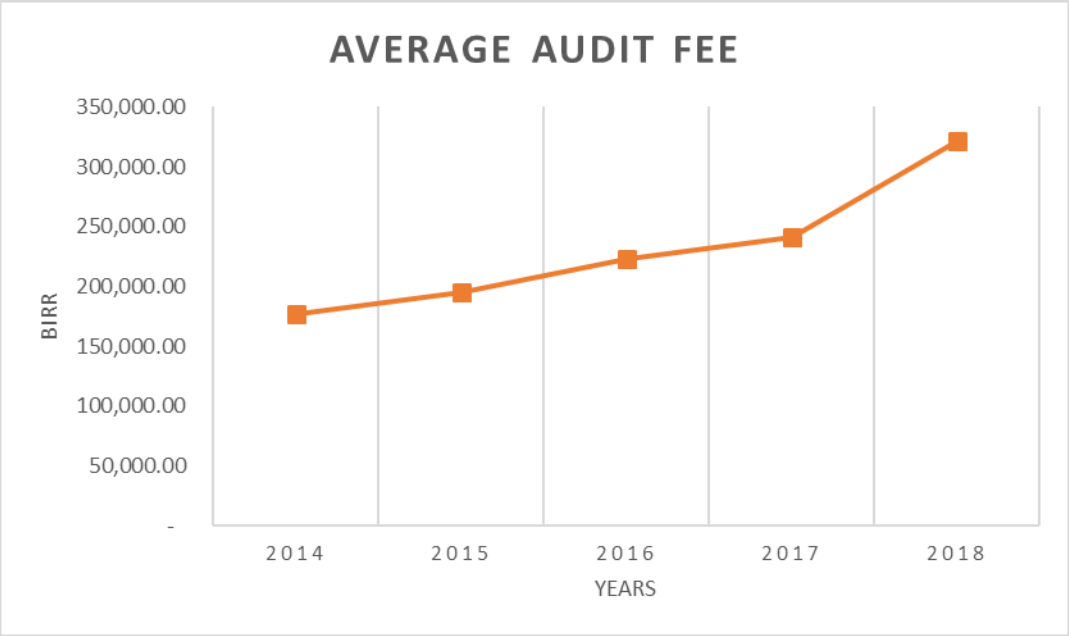

Figure 3: Average Yearly Audit Fees for the Sample Banks

The graph above shows a gradual but steady rise in fees from year 2014 to 2016 which became sharper from fourth year, 2017 when the banks began switching from the previous reporting local standard, to IFRS.

The sample is further sub-grouped into two: banks audited by the Grade- A auditors and Non-Grade-A audit firms. From the total 80 firm-year observations, 55 (representing 69%) were audited by the Grade-A audit firms. Figure 4 below shows the graphic view of the statistics. As per the graph, the average fee incurred by banks audited by the Grade-A audit firms is relatively higher than those audited by the Non-Grade A in the pre IFRS period by quite a

substantial margin. However, in the conversion periods (2016-2017) the average fee charged by Grade A moves staidly while a sharp rise in the audit fee charged by the non-Grade A firms and exceeded the average fee charged by Grade A in the year 2018.

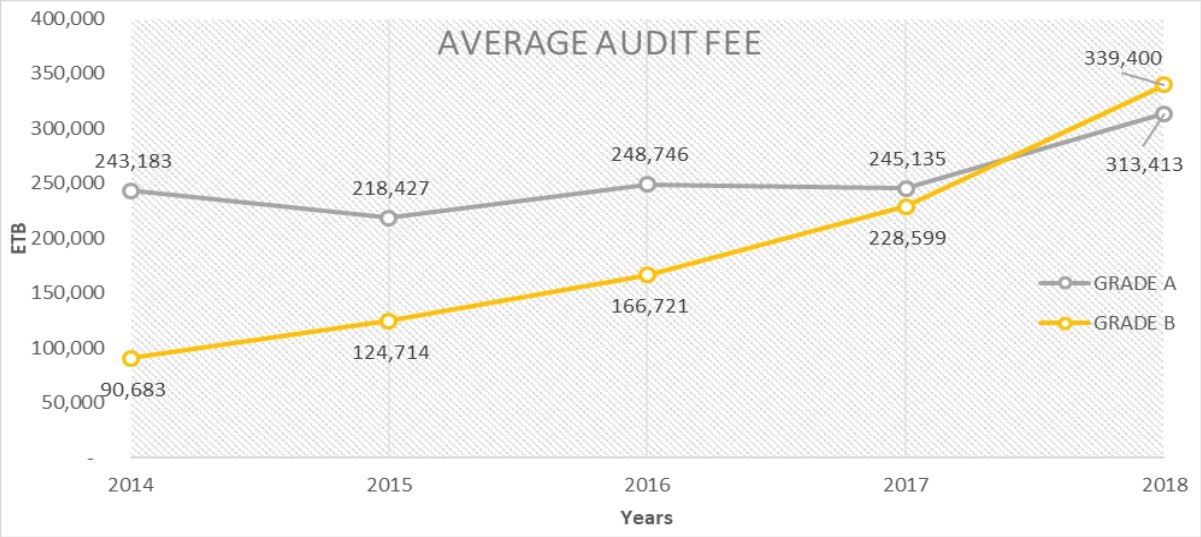

***Figure 4**: Average Audit Fee Based on Grades of Auditor*

It is witnessed that banks audited by the Grade A tend to pay higher audit fees than those audited by Non-Grade-A audit firms. The average audit fee charged for entire period by Grade-A is 38% higher than charged by Non Grade-A firms. (ETB 183,145 and 253,366). Although this supports arguments that the GradeA audit firms usually charge premium for brand names associated with superior quality audit; Interestingly the post IFRS adoption incremental audit fee charged by non-Grade-A auditors is about 62% higher than the incremental fee charged by Grade A auditors. The incremental charge by Grade-A auditors is about 31% from (ETB 238,873 to 313,413) while the counterpart non-Grade-A auditors is about 136% from (ETB 144,082 to 339,400) post IFRS period. And the average audit fee charged by Non-GradeA auditors in post IFRS period is about 8% higher than the counterpart Grade-A auditors (ETB 313,413 against 339,400).

This shows that in the post-adoption period ceteris parabus, Non-Grade-A auditors tend to charge more for their audit service than the Grade-A auditors. This observation provide primary evidence in support of investment in quality assumption which assumes that GradeA always has higher quality controls than the non-GradeA companies. The assumption further claims that while all companies would need to increase their efforts after the application of IFRS, the GradeA will have to improve by a smaller amount on average, less than that required by non-GradeA, hence the non-GradeA firms need to have a relatively greater effort, as they work to catch up to the enhanced quality expectations brought about by the application of IFRS as a result they charge higher fees.

It is observed that not only has the average audit fee increased over the study period but the extreme least and largest amounts year on year appear to have increased also. Figure 5 below demonstrated both the minimum and maximum audit fee charged for banks increased gradually over the study period. Over a period of five years the biggest amount of audit fee charged for banks has risen from ETB 475,000 to ETB 675,000 while the least audit fee charged for a bank risen from ETB 40,950 to ETB 131,000 almost three times increase.

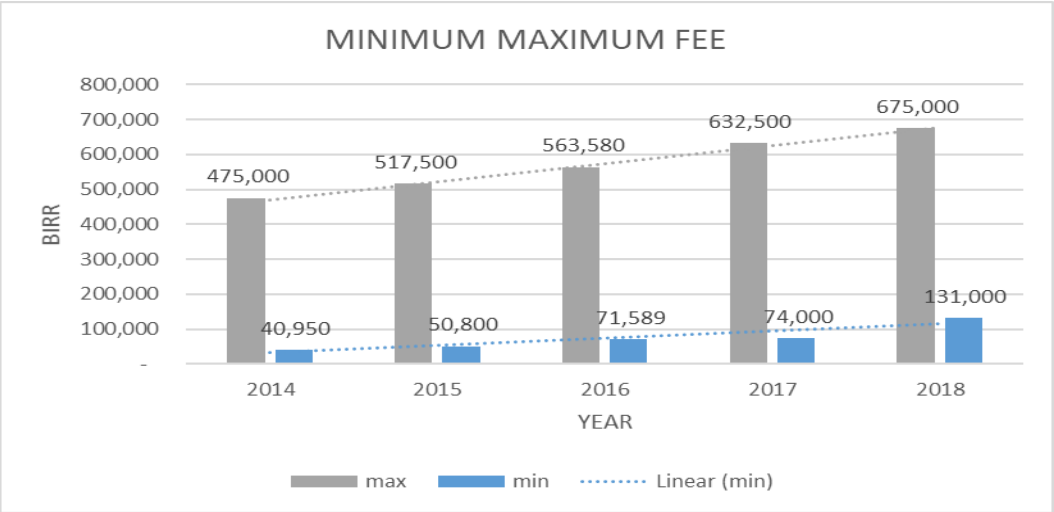

***Figure 5**: Yearly Minimum and Maximum Audit Fee Chart*

4.3 Pre-Post IFRS Variance Analysis of AF

Analysis of mean difference between pre and post IFRS adoption using independent t-test of the AF showed statistically significant difference with t(78) = -2.78, p = 0.01. The negative t-value indicates that increment of the mean AF from pre IFRS to post IFRS adoption with MD = -0.497. Therefore, the outcome of the t-test shows that post IFRS audit fee is higher than the pre IFRS audit fee of the client banks.

Table 5: t-test AF Means based on IFRS

Independent Variable	Levene's Test		t-test				95% CI of D	
	F	***Sig.***	***t***	***df***	***MD***	***SED***	***Lower***	***Upper***
IFRS	0.16	0.69	-2.78**	78	-0.497	0.179	-0.852	-0.141

Note: MD = Mean Difference; SED = Std. Error Difference ** Significance level at 0.01

4.4 The Correlation Analysis for Audit Fee Model

Pearson's correlations test was performed to ascertain the levels of association between the dependent and the independent variables. The correlation analysis of the dependent variable against the independent variables indicated that with the exception of REC and BIG4, all independent variables have statistically significant relationship with the dependent variable (AF). Predictor variables IFRS, SIZE and LEV are directly correlated with AF, whereas, LIQ, ROA and CR have negatively related with AF. Besides, both groups with exception of ROA have showed statistically significant relationship with AF at significance value of p = 0.01, while ROA showed significance at significance value of p = 0.05. However, the predictor variables REC and GradeA showed insignificant positive correlation with AF; r = 0.02 and 0.07 respectively.

As indicated in Table 6 below, comparative examination on the correlation coefficients among the predictor variables also showed, except two pairs of predictor variables, correlation coefficient values less than 0.5. The two pairs that demonstrated r>0.5 are CR and REC and

REC and LEV with R-values of 0.53 and 0.57 respectively. However, multiple linear regression models allow inter-correlation between a pair of independent variables up to 0.8, as noted above the highest r- values(r = 0.53, 0.57) are less than the general correlation strength tolerance (i.e. r = 0.8). Therefore, as long as the multicollinearity tests are within the acceptable tolerance ranges the three independent variables were included into the estimation model. Another simplest way to ascertain whether or not our explanatory variables are highly correlated with each other is to conduct a superior measure which is the variance inflation factor (VIF) scores test, If VIF score ≥ 10 pose serious multicollinearity problem. As reported in Chapter 3 Table 1, the highest VIF scores for each independent variable in the model is 2.43 which is below the threshold of 10. This suggests no significant effect of multicollinearity problem among the variables on the results.

Table 6: Correlation Matrix for the Variables in the Audit Fee Model

		1	2	3	4	5	6	7	8	9
1	**AF**	1.00								
2	**IFRS**	0.29**	1.00							
3	**SIZE**	0.80**	0.32**	1.00						
4	**REC**	0.19	0.19	0.21	1.00					
5	**CR**	-0.36**	-0.01	-0.37**	0.53**	1.00				
6	**LIQ**	-0.33**	-0.26*	-0.21	-0.15	-0.03	1.00			
7	**ROA**	-0.24*	-0.05	-0.27*	-0.18	0.01	0.10	1.00		
8	**LEV**	0.40**	0.07	0.49**	0.57**	0.23*	-0.10	-0.40**	1.00	
9	**GradeA**	0.07*	0.03	0.07	-0.07	-0.26*	-0.16	-0.10	0.01	1.00

Note: **. Correlation is significant at the 0.01 level * Correlation is significant at the 0.05 level**.**

4.5 The Multivariate Regression Analysis

4.5.1 Random Effect Model Analysis of Audit Fee

In deciding whether the fixed effects model or random effects model is more suitable the data, the Haussmann's specification test is conducted. The chi-square ($\chi 2 = 6.44$) shows a p-value of 0.59 which is greater than α of 5%. The null hypothesis (Ho) of the test of no significant difference between the coefficients of the fixed ($\boldsymbol{\beta_{FE}}$) and random ($\boldsymbol{\beta_{RE}}$) models (i.e. $\boldsymbol{\beta_{FE}}$ - $\boldsymbol{\beta_{RE}}$) has produced an output of $\chi 2 = 3.68$, $p = 0.87$). Had this difference been significant ($p < 0.05$) the random effect estimator would not have been used. Therefore, this output indicates that the Ho (difference in coefficients not systematic) is rejected and it is assumed that correlation between the error term of audit fee model and the independent variables exists. Thus, the random effects model is used.

4.5.2 Regression Results for Audit Fee Model

As demonstrated in Table 7, the independent variables included in the regression estimation based on the random effect model of the audit fees are *IFRS, Size, REC, CR, LIQ, ROA, LEV and GradeA.*

Table 7: Random-Effects Regression Results

Random-effects GLS regression				Number of obs =		80
Group variable: bnk_id				Number of groups =		16
R-sq: within = 0.6573				Obs per group: min =		5
between = 0.6697				avg =		5
overall = 0.6610				max =		5
Std. Err. adjusted for 16 clusters in bnk_id)				Wald chi2(8) =		525.66
corr(u_i, X) = 0 (assumed)				Prob > chi2 =		0.0000
AF	Coef.	Rob. Std.	Z	P>z	[95% Conf.	Interval]
IFRS	0.216***	0.064	3.39	0.001	0.091	0.341
SIZE	0.292***	0.083	3.53	0.000	0.130	0.454
REC	-0.967	0.711	-1.36	0.174	-2.361	0.428
CR	-0.259*	0.114	-2.26	0.024	-0.483	-0.034
LIQ	-0.996	0.768	-1.30	0.195	-2.502	0.510
ROA	-1.047	4.033	-0.26	0.795	-8.951	6.858
LEV	3.658***	1.069	3.42	0.001	1.562	5.753
GradeA	0.124	0.106	1.17	0.244	-0.084	0.332
_cons	3.312	1.968	1.68	0.092	-0.545	7.168
sigma_u	0.35234925					
sigma_e	0.21167395					
rho	0.73480729	(fraction of variance due u_i)				

Note: ***significant at 0.001 level ** significant at 0.01 level.** * Significant at 0.05 level**.**

As indicated on Table 7 above, the robust random effect regression model output in the Wald chi-square value $\chi 2$ (8) = 525.66, p = 0.000) this shows that the goodness of fit test statistic and overall significance of explanatory powers all the independent variables. Therefore, the statistically significant chi-square values give us an assurance that the random effect estimation model can be used to predict the AF based on the predicting power of the independent variables. The overall coefficient of determination, R^2 = 0.6610 shows that about 66.1% of the variations in audit fees can be accounted for by the model. In other words, the collective contribution of the independent variables to the estimation of AF in the random effect regression model accounts 66.1%.

The above results show that for the most part the model‟s explanatory power is driven by IFRS, SIZE and LEV.

Further investigation of the influence of independent variables on *AF* shows that *IFRS* has the highest *Z-score* value with a positive statistically significant coefficient, p-value of 0.000. this result complies with the independent t-test based on before and after introduction of *IFRS* that there exists statistically significant difference between pre and post means of *audit fees* with t (78) = -2.7, p = 0.007 and MD between the two *IFRS* groups is -0.50. The hypothesis is supported at 1% significance level. Therefore, the null hypothesis that IFRS adoption affects audit fees cannot be rejected.

This implies that Ethiopian banks pay higher audit fees when they prepare financial statements in accordance with IFRS than they would suppose the financial statements been prepared in accordance with the generally accepted accounting principles under the historical cost convention and industry specific Directives of the National Bank of Ethiopia.

For the control variables, SIZE showed highest significant influence on *AF*, with significance coefficient of p = 0.000**.** The size of the banks has direct relationship with the AFs that those client banks with bigger size pay more audit fee than those banks with smaller size. Intuitively, large banks are expected to incur higher audit fees being associated with high volumes of transactions that require greater audit effort.

Similarly LEV showed a significant influence in AF at 0.1% significance level, significant positive coefficient show that highly leveraged banks pay more than the less leveraged banks. This provides evidence of supports the argument that audit firms charge higher fees for risky firms as a cushion in event of audit failure and possible litigation claims for damages they may have to pay.

The ***CR*** have significant negative relationship with audit fees of the client banks at 5% significance level (refer table-6). The significant and negative coefficient for CR indicates that audit fees are higher for riskier clients. This means that a bank with low liquidity pays higher than those banks with a higher liquidity ratios.

The remaining variables *REC, LIQ ROA* and *GradeA* showed insignificant coefficients, the former three have negative relationship with AF while the latter showed positive relationship with AF.

4.5.3 Further Analysis: Audit Fee Model

The regression output presented in Table 7 above shows that a number of the independent variables have high probability values which signify their statistical irrelevance in the audit fee model. In order to retain the regression coefficients (**β**) of each predictor variables, with statistically significant ***Z***-value, are taken from the table 7 above and a pair-wise as well as auxiliary regression analysis is conducted to consider the relative importance of each independent variable in the estimation model. Accordingly, the predictor variables that have relative importance are retained while less relevant (irrelevant variables) are dropped out and dummy interaction variable *IFRSGradeA* is introduced into the model to assess whether companies audited by the GradeA audit firms paid higher IFRS related audit fees than those audited by the non- GradeA. Consequently, the final model become:

$$AF_{it} = \beta_0 + \beta_1 IFRS_{it} + \beta_2 SIZE_{it} + \beta_3 REC_{it} + \beta_4 LIQ_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 GradeA_{it} + \beta_8 IFRS\ GradeA_{it} + \varepsilon \quad ...\text{eqn (3)}.$$

The regression results using equation 3 are tabulated in Table 8 below.

Table 8: Random effect regression analysis of significant variables

Random-effects GLS regression				Number of obs =		80
Group variable: bnk_id				Number of groups =		16
R-sq: within = 0.6325				Obs per group: min =		5
Between = 0.7238				avg =		5
Overall = 0.6961				max =		5
(Std. Err. adjusted for 16 clusters in bnk_id)				Wald chi²(7) =		896.45
corr(u_i, X) = 0 (assumed)				Prob > chi2 =		0.0000
AF	***Coef.***	***Robust Std. Err.***	***Z***	***P>z***	***[95% Conf. Interval]***	
IFRS	0.291***	0.065	4.49	0.000	0.164	0.418
SIZE	0.397***	0.074	5.38	0.000	0.252	0.542
REC	-1.579**	0.608	-2.60	0.009	-2.770	-0.387
LIQ	-0.899	0.733	-1.23	0.220	-2.336	0.538
LEV	2.437	1.366	1.78	0.074	-0.241	5.114
ROA	-1.404	4.559	-0.31	0.758	-10.338	7.531
GradeA	0.146	0.111	1.31	0.191	-0.073	0.364
IFRSGradeA	-0.186	0.128	-1.45	0.147	-0.436	0.065
_CONS	1.892	2.185	0.87	0.387	-2.391	6.174
Sigma _u .3568328						
Sigma _e .2212282						
rho .72234934 (fraction of variance due to u_i)						

Note: ***significant at 0.001 level ** significant at 0.01 level.** * Significant at 0.05 level**.**

Table 8 above displays the robust regression estimation results for the audit fee model for banks. The result suggests overall fitness of the model for the data with significant Wald's chi² values ($\chi 2$ (7) = 896.45, p = 0.0000). The overall R^2 values (0.6961) indicate that the predictor variables together explain around 69.61 % of the variations in audit fees. Remarkably, the results show that the independent variables including the hypothesis variable (***IFRS***) have increased their statistically highly significant magnitude of coefficients. Besides, the higher value of the Wald chi² values increment from $\chi 2$ (8) =585.55 to $\chi 2$ (7) = 896.45 shows that this model has good fitness than the first model. With regards to the hypothesis variable increment of positive coefficient of the ***IFRS*** from 0.216 to 0.291 (both at p = 0001) confirms that banks generally incur substantially higher audit fee for applying the IFRS. This finding points to the

overall complexity of the IFRS standards. IFRS is significantly positive at less than the 0.001 percent level. This is consistent with H1, suggesting that the audit fee is positively associated with IFRS adoption as a result of the increase in audit complexity brought about by IFRS adoption. The hypothesis is supported at 1% significance level

The other three independent variables *(SIZE, LEV and GradeA*) are all positively related with the dependent variable (AF) while *CR, ROA and IFRSGradeA are negatively related,* Size and REC are significant at 0.1 % significance level.

The complexity variable REC surprisingly have negative coefficients, significant at 0.01% significance level. This observation could be explained by the fast development in the information systems which makes audit of such assets less complex. Audit of receivable posed a great complexity in 1980s, while this days audit of such assets are now easier to audit than intangible assets, especially with the adoption of IFRS accounting standards.

Finally the interaction variable IFRSGradeA, have a negative relationship with audit fees, albeit insignificantly the negative coefficient indicates that the audit fees charged by GradeA firms after IFRS adoption is less than the audit fees charged by non big4 audit firms. The result controverts with the H3 that the GradeA audit firms charge higher fees than non GradeA firms in post IFRS regime. Therefore, the null hypothesis that GradeA firms charge more after the introduction of IFRS is rejected.

CHAPTER FIVE

DISCUSSION, RECOMMENDATION AND CONCLUSION

5.1 Summary of Findings

This section summarises the findings as follows. First, the study examines the effect of IFRS adoption on audit fees among commercial banks operating in Ethiopia. The study finds a significant positive relationship between IFRS and audit fees which shows that IFRS adoption substantially increased audit fees among commercial banks operating in Ethiopia. This is attributed to the general complexity of the IFRS. The study also finds that banks audited by the Non-GradeA audit firm experience greater IFRS audit fee increases than those audited by the GradeA audit firms

5.2 Discussion

The results of the multiple regression show the following indications: the reported high chi square value shows the goodness of fit suggesting the model fits the data. The Adjusted R2 of 0.69 indicate that about 69% of the variations in audit fees can be explained by the model. Prior studies have reported adj R2 value ranging from 60 to 80% (Vrentzou, 2011).

• The variables of primary concern IFRS

As predicted, the coefficient of the primary variable of interest (IFRS) shows a very strong statistical significance at 1% level in both audit fee models Table 6 and Table 7. Accordingly, this results support hypothesis 1, which states that the, the transition to IFRS is associated with an increase in the amount of audit fees. From these results we can conclude that the transition to IFRS was expensive in terms of auditing of accounts prepared under IFRS. This observation implies that the adoption and implementation of the new standard (IFRS) have significantly increased audit fees for Ethiopian banks in the IFRS-compliant period.

This result can be explained by the increase in level of disclosure in the financial statements and high level of professional judgment. This evidence support the argument that auditors exert

extra effort on IFRS based financial statement due the complexity and much disclosures associated with it.

These results corroborate the results of prior studies on the impact of IFRS on audit fees Hart et al. (2009), Griffin et al. (2008) Schadewitz and Vieru (2007), Le Maux (2007) and Jermakowiez and Tomaszewski (2006), Lin & Yen, (2010).

• The size of the firm audited

According to results, the size of the bank seems to have a positive and significant effect on the amount of fees (Z = 5.38 and P = 0.000), as rightly predicted, the coefficient of SIZE is positive and highly significant, suggesting that size is positively related to audit fees. The result implies that audit fees are higher for banks that are bigger in size relative to small banks. This result corroborates to the results found by (Craswell & Francis, 1999; DeAngelo, 1981; E. G. Dodzi, 2015; S. Kim et al., 2012; Ling et al., 2014; Simunic, 1980).

The study relate this result to the argument by Fields et al. (2004) that large banks are usually associated with much more complex financial profiles and diverse sources of liquidity than small banks as well has considerably different risk profiles.

The consistent significance of the positive coefficient on SIZE appear to corroborate the assertion by Ling et al (2014), that size is by far the most dominant and significant variable which account for over 70 percent of all variations in audit fees.

This findings also support the assertion by Simunic (1980) that audit of larger companies require additional detailed audit procedures and tests, more effort and time to test and analyze the company's large data and information.

• The Complexity Variable

The coefficient of REC shows negative and significant at 5 percent indicating that banks with complex operations pay relatively lower audit fees. Contrary to hypothesis 3, the weight of loans and advances does not seem to have a positive and significant effect on the amount of audit fees (Z = -2.60 and P= 0.009). This result contrast with the findings reported by (Choi & Yoon, 2014; E. Dodzi, 2015; Simunic, 1980; Vieru, & Schadewitz, 2010) but corroborates with the more recent studies (Le Maux 2010; Loukil, 2017). This result can be explained by the

increasingly less complex nature of these audit assets. These elements indicated a high risk in 80s, are now easier to audit than intangible assets, especially with the adoption of IFRS accounting standards.

• Risk Variable

The leverage ratio LEV showed a significant influence in AF at 0.1% significance level, significant positive coefficient show that highly leveraged banks pay more than the less leveraged banks. This provides evidence of supports the argument that audit firms charge higher fees for risky firms as a cushion in event of audit failure and possible litigation claims for damages they may have to pay. The result supports the argument that audit firms charge higher fees for risky firms as a cushion in event of audit failure and possible litigation claims for damages they may have to pay. This finding contradicts Vieru & Schadewitz (2010) who documented a significant negative coefficient in Finland but agree with other recent results (Griffin et. al., 2009; Kim et. al., 2012; De George et. al., 2013; Choi & Yoon, 2014).

This result is consistent with (Fields et al., 2004). On the whole, higher audit fees in the banking sector can be attributed to the new accounting standard, size of banks and level of risk (liquidity and profitability risk).

• The Size of Audit firm.

The GradeA variable showed a positive coefficient albeit insignificantly, it shows that client banks of GradeA Auditors tend to pay more than the client banks of non-GradeA auditors. The interaction variable IFRSGradeA showed a negative coefficient meaning that in the post-adoption period, Non-GradeA auditors tend to charge more for their audit service than the Grade-A auditors. This observation provide primary evidence in support of investment in quality assumption which assumes that GradeA always has higher quality controls than the non-GradeA companies. This

result is consistent with (Lin & Yen, 2016; Lyubimov 2013) generally banks audited by the Non-GradeA audit firm experience greater IFRS audit fee increases than those audited by the GradeA audit firms post IFRS adoption.

5.3 Conclusion

In summary, the findings show that preparing financial statements in accordance with the requirements of IFRS as a rather more complex standard relative to previous domestic GAAPs increases audit fees.

5.4 Recommendation

5.4.1 Contribution of the Study

The main contribution of this study is that it is one of the few studies to examine the impact of material changes in accounting rules, such as the application of IFRS, on audit activity from the perspective of developing countries. The results provide empirical evidence that can be used to assess the impact of the application of IFRS.

5.4.2 Future Research Considerations

In this study the impact of IFRS on audit fees is only measured with one year IFRS adoption period, which couldn't explain the increases in fee will be continuous. Future studies should consider subsequent years to proof whether the impact of IFRS in audit fees is continuous or will it be declined later. And also this study is limited to banking industry only further studies could broaden the scope and could make industry comparisons to better understand the audit fee formulation and the effects of IFRS.

REFERENCES

Alemi, T. D., & Pasricha, J. . (2017). Corporate Financial Reporting Legal and Regulatory Frameworks in Ethiopia. *Journal of Accounting and Taxation*, *9*(May), 56–67. https://doi.org/10.5897/JAT2016.0213

Anwar, U.-H., & Leghari, M. K. (2015). Determinants of Audit Fee in Pakistan. *Research Journal of Finance and Accounting*, *6*(9), 176–189. Retrieved from http://www.iiste.org/Journals/index.php/RJFA/article/view/22166

Ball, R. (2006). International Financial Reporting Standards (IFRS): pros and cons for investors. *Accounting and Business Research*, *36*(sup1), 5–27. https://doi.org/10.1080/00014788.2006.9730040

Beattie, V., Goodacre, A., Pratt, K., & Stevenson, J. (2001). The determinants of audit fees - Evidence from the voluntary sector. *Accounting and Business Research*, *31*(4), 243–274. https://doi.org/10.1080/00014788.2001.9729619

Bratten, B., Gaynor, L. M., McDaniel, L., Montague, N. R., & Sierra, G. E. (2013). The audit of fair values and other estimates: The effects of underlying environmental, task, and auditor-specific factors. *Auditing*, *32*(SUPPL.1), 7–44. https://doi.org/10.2308/ajpt-50316

Cameran, M., & Perotti, P. (2014). Audit fees and IAS/IFRS adoption: Evidence from the banking industry. *International Journal of Auditing*, *18*(2), 1–15. https://doi.org/10.1111/ijau.12019

Cannon, N. H., & Bedard, J. C. (2017). Auditing challenging fair value measurements:

Evidence from the field. *Accounting Review*, *92*(4), 81–114. https://doi.org/10.2308/accr-51569

Chen, L. H. (2017). The Impact of IFRS versus U.S. GAAP on Audit Fees and Going Concern Opinions: Evidence from U.S.-Listed Foreign Firms.

Choi, J., Kim, C., Kim, J. B., & Zang, Y. (2010). Audit office size, audit quality, and audit pricing. *Auditing*, *29*(1), 73–97. https://doi.org/10.2308/aud.2010.29.1.73

Choi, W. S., & Yoon, S. M. (2014). Effects of IFRS adoption, Big N factor, and the IFRS-related consulting services of auditors on audit fees: The case of Korea. *Asian Journal of Business and Accounting*, *7*(1), 55–80.

Craswell, A. T., & Francis, J. R. (1999). Pricing initial audit engagements: A test of competing theories. *Accounting Review*, *74*(2), 201–216. https://doi.org/10.2308/accr.1999.74.2.201

De Fuentes, C., & Sierra-Grau, E. (2015). IFRS adoption and audit and non-audit fees: empirical evidence from Spanish listed companies. *Revista Espanola de Financiacion y Contabilidad*, *44*(4), 387–426. https://doi.org/10.1080/02102412.2015.1075341

De George, E. T., Ferguson, C. B., & Spear, N. A. (2013). How much does IFRS cost ? IFRS Adoption and Audit Fees. *Accounting Review*, *88*(2), 429–462. https://doi.org/10.2308/accr-50317

DeAngelo, L. E. (1981). Auditor size and audit quality. *Journal of Accounting and Economics*, *3*(3), 183–199. https://doi.org/10.1016/0165-4101(81)90002-1

Dodzi, E. (2015). *The Effects of the International Financial Reporting Standards (IFRS) on Financial Statements Audit in Ghana*. UNIVERSITY OF GHANA , LEGON.

Dodzi, E. G. (2015). *The Effects of the International Financial Reporting Standards (IFRS) on Financial Statements Audit in Ghana*. UNIVERSITY OF GHANA , LEGON.

Edmond, A. (2016). *INTERNATIONAL FINANCIAL REPORTING STANDARDS , REPORTING QUALITY AND AUDIT FEE OF FINANCIAL INSTITUTIONS IN GHANA*. UNIVERSITY OF GHANA.

Fantahun, F. (2012). *The Adoption of International Financial Reporting Standards (IFRS) in Ethiopia : Benefits and Key Challenges*. Addis Ababa University.

Fareedmastan, P., Gebru, Z., Anuradha, A., & Fissa Kassa. (2015). Implementation of Ifrs in Ethiopian Banks : an Assessement of Banks ' Reluctance to Implement It. *INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH*, *4*(2277–8179), 4–6.

Federal Negarit Gazeta. Financial Reporting Proclamation, Pub. L. No. PROCLAMATION No, 847/2014, 39 (2014). Ethiopia: THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA.

Fortune Newspaper, (2017, October 22). IFRS: Achivable or Impractical, Birhane Samuel p. 201.

Friis, O., & Nielsen, M. (2010). *Audit fees and IFRS accounting Is information costly? Discussion Papers on Business and Economics*. Retrieved from http://static.sdu.dk/mediafiles//3/3/3/%7B33328229-2B98-44A1-81B9-7E1F43DC1A8E%7Ddpbe3_2010.pdf

Gellings, J. (2017). IFRS and enforcement on audit quality : Incorporating the mediating effect of audit fees, (June Unpublished thesis, Nijmegan School of management Radbound University Nijmegan).

Ghosh, A., & Pawlewicz, R. (2008). The Impact of Regulation on Auditor Fees : Evidence from the Sarbanes-Oxley Act The Impact of Regulation on Auditor Fees : Evidence from the Sarbanes-Oxley Act.

Griffin, P. A., & Lont, D. H. (2007). An Analysis of Audit Fees Following the Passage of Sarbanes-Oxley. *Asia-Pacific Journal of Accounting & Economics*, *14*(2), 161–192. https://doi.org/10.1080/16081625.2007.9720794

Griffin, P. A., Lont, D. H., & Sun, Y. (2009). Governance regulatory changes, International Financial Reporting Standards adoption, and New Zealand audit and non-audit fees: Empirical evidence. *Accounting and Finance*, *49*(4). https://doi.org/10.1111/j.1467-629X.2009.00310.x

Griffin, P. a, Lont, D. H., & Sun, Y. (2008). Governance regulatory changes, IFRS adoption, and New Zealand audit and non-audit fees: Empirical evidence. *Program*, (July).

Hart, C., Rainsbury, E. A., & Sharp, J. (2009). NZ IFR – The Impact on Fees Paid to Auditors. *Chartered Accountants' Journal*, *88*(6), 42–3.

HAY, D. C., KNECHEL, W. R., & WONG, N. (2006). Audit Fees: A Meta-analysis of the Effect of Supply and Demand Attributes. *Contemporary Accounting Research*, *23*(1), 141–191. https://doi.org/10.1506/4XR4-KT5V-E8CN-91GX

Herbert, W. E., & Tsegba, I. N. (2013). Economic Consequences of International Financial

Reporting Standards (IFRS) Adoption: Evidence from a Developing Country. *European Journal of Business and Management*, *5*(28), 80–99.

Humphrey, C., Loft, A., & Woods, M. (2009). The global audit profession and the international financial architecture: Understanding regulatory relationships at a time of financial crisis. *Accounting, Organizations and Society*, *34*(6–7), 810–825. https://doi.org/10.1016/j.aos.2009.06.003

ICAEW, T. I. of C. A. in E. (2004). Auditing Implications of IFRS Transition. *Technical Release*.

Jacob, R. A., & Madu, C. N. (2009). International financial reporting standards: an indicator of high quality? *International Journal of Quality & Reliability Management*, *26*(7), 712–722. https://doi.org/10.1108/02656710910975778

Jermakowicz, E. K., & Gornik-Tomaszewski, S. (2006). Implementing IFRS from the perspective of EU publicly traded companies. *Journal of International Accounting, Auditing and Taxation*, *15*(2), 170–196. https://doi.org/10.1016/j.intaccaudtax.2006.08.003

Joshi, P. L., & AL-Bastaki, H. (2000). Determinants of Audit Fees: Evidence from the Companies Listed in Bahrain. *International Journal of Auditing*, *4*(2), 129–138. https://doi.org/10.1111/1099-1123.00308

Joshi, P. L., Bremser, W. G., & Al-Ajmi, J. (2008). Perceptions of accounting professionals in the adoption and implementation of a single set of global accounting standards: Evidence from Bahrain. *Advances in Accounting*, *24*(1), 41–48.

https://doi.org/10.1016/j.adiac.2008.05.007

Jung, S.-J., Kim, B.-J., & Chung, J.-R. (2016). The association between abnormal audit fees and audit quality after IFRS adoption. *International Journal of Accounting & Information Management*, *24*(3), 252–271. https://doi.org/10.1108/IJAIM-07-2015-0044

Kamwenji, J. (2014). The Effect of Adoption of International Financial Reporting Standards on the Quality of Accounting Information of Deposit Taking Saccos in Nairobi County. *International Journal of Business and Management Invention*, *1*(1), 36–45.

Kim, J. B., Liu, X., & Zheng, L. (2012). The impact of mandatory IFRS adoption on audit fees: Theory and evidence. *Accounting Review*, *87*(6). https://doi.org/10.2308/accr-50223

Kim, S., Yang, D. C., & Boulevard, C. B. (2012). Factors Affecting the Adoption of IFRS, *17*(3), 4346.

Konadu, V. (2018). The unintended consequences of IFRS adoption on the audit market in Africa : An oligopoly for the Big4, (March).

Lin, H.-L., & Yen, A.-R. (2016). The Effects of IFRS Adoption on Audit Fees for Listed Companies in China. *Asian Review of Accounting*, *24*(1), 43–68. https://doi.org/10.1108/ARA-02-2014-0028

Ling et al. (2014). *the Determinants of Audit Fees*.

loukil, L. (2017). The impact of IFRS on the Amount of Audit fees: The case of large French Listed Companirs. *Auditing*, *36*(1), 63–84. https://doi.org/10.2308/ajpt-51514

Lourenço, I. M. E. C., & Branco, M. E. M. de A. D. C. (2015). Main Consequences of IFRS Adoption: Analysis of Existing Literature and Suggestions for Further Research. *Revista Contabilidade & Finanças*, *26*(68), 126–139. https://doi.org/10.1590/1808-057x201500090

Lyubimov, A. (2013). *Regulation And The Auditing Profession*. University of Central Florida.

Madawaki, A. (2012). Adoption of International Financial Reporting Standards in Developing Countries: The Case of Nigeria. *International Journal of Business and Management*, *7*(3), 152–161. https://doi.org/10.5539/ijbm.v7n3p152

Mulley, M., Partner, S., Perez, I., Garrett, G., Fitzsimons, A. P., Satenstein, J. L., … Morrissey, K. (2010). Fair Value Measurements and Reporting Developments, and the Continued Movement toward International Financial Reporting Standards. *Review of Business*, *30*(2), 4–10.

Mustafa, H. (2017). *DETERMINANTS OF AUDIT FEE AMONG ETHIOPIAN INSURANCE COMPANIES*. ST. MARY'S UNIVERSITY SCHOOL.

Ng, H. Y., Tronnes, P. C., & Wong, L. (2018). Audit seasonality and pricing of audit services: Theory and evidence from a meta-analysis. *Journal of Accounting Literature*, *40*(November 2017), 16–28. https://doi.org/10.1016/j.acclit.2017.11.003

Ochei, I., & Akande, A. . (2012). INTERNATIONAL FINANCIAL REPORTING STANDARD (IFRS): BENEFITS, OBSTACLES AND INTRIGUES FOR IMPLEMENTATION IN NIGERIA. *Business Intelligence Journal*, *3*(10), 299–307.

Okpala, K. E. (2012). Australian Journal of Business and Management Research. *Australian Journal of Business and Management Research*, *2*(05), 76–83.

Outa, E. R. (2011). The Impact of International Financial Reporting Standards (IFRS) Adoption on The Accounting Quality of Listed Companies In Kenya. *International Journal of Accounting and Financial Reporting*, *1*(1), 212. https://doi.org/10.5296/ijafr.v1i1.1096

Rajgopal, S., Suraj, S., & Zheng, X. (2015). Measuring Audit Quality.

Redmayne, N. B., & Laswad, F. (2013). An Assessment of the Impact of IFRS Adoption on Public Sector Audit Fees and Audit Effort - Some Evidence of the Transition Costs on Changes in Reporting Regimes. *Australian Accounting Review*, *23*(1), 88–99. https://doi.org/10.1111/j.1835-2561.2012.00166.x

Risheh, K. (2014). The Impact of IFRS Adoption on Audit Fees: Evidence from Jordan. *Journal of Accounting and Management …*, *13*(3), 520–536. Retrieved from https://ideas.repec.org/a/ami/journl/v13y2014i3p520-536.html

Roger, D., Jay, S., & Jeffrey, T. (2006). Auditing Fair Value Measurements : A Synthesis of Relevant Research, *20*(3), 287–303.

ROSC Ethiopia. (2007). ROSC Ethiopia, Accounting and Auditing (2007). Retrieved from www.worldbank.org/ifa/rosc_aa_ethiopia.pdf

Salman, & Carson, E. (2008). The Impact of the Sarbanes-Oxley Act on the Audit Fees of Australian Listed Firms. *International Journal of Auditing*, 127–140.

Shan, Y. G., & Troshani, I. (2016). The effect of mandatory XBRL and IFRS adoption on audit fees. *International Journal of Managerial Finance*, *12*(2), 109–135. https://doi.org/10.1108/IJMF-12-2013-0139

Simegn, Y. (2015). Adoption of International Financial Reporting Standards (IFRS) in Ethiopia : Empirical Evidence.

Simunic, D. A. (1980). The Pricing of audit service Theory and Evidence. *Journal of Accounting Research*, *18*(1), 161–190.

Simunic, D. A., & Stein, M. T. (1996). The impact of litigation risk on audit pricing: A review of the economics and the evidence. *Auditing*, *15*(SUPPL.), 132–134. https://doi.org/Article

Teshome, F. (2017). Challenges and Prospects of International Financial Reporting Standards (IFRS) implementation in Ethiopia.

Thompson, S. C. (2016). Accounting for a Developing World : A look at International Standards on Developing Countries, (5), 23.

Vieru, Markku J;Hannu J, S. (2010). Impact of IFRS transition on audit and non-audit fees : evidence from small and medium-sized listed companies in Finland. *The Finnish Journal of Business Economics*, *1*, 11–41. https://doi.org/10.2139/ssrn.967314

Vrentzou, E. (2011). The effects of International Financial Reporting Standards on the notes of auditors. *Managerial Finance*, *37*(4), 334–346. https://doi.org/10.1108/03074351111115296

Yaacob, N. M., & Che-Ahmad, A. (2012). Audit fees after IFRS adoption: Evidence from Malaysia. *Eurasian Business Review*, *2*(1), 31–46. https://doi.org/10.14208/BF03353806

APPENDIXES

Appendix-A	
List of all Grades 'A' private audit firms exist in Ethiopia	
S. No.	Grades 'A' audit firms
1	A.A. Bromhead and Co. Audit Firm: A.A. Bromhead and Co. Auditor: Mr. A.A. Bromhead
2	A.W. Thomas and Co. Audit Firm: A.W. Thomas and Co. Auditor: Mr. A.W. Thomas, Ato Melaku Abeje
3	Asrat Gezahegn and Berbersa Audit Partnership Audit Firm: Asrat Gezahegn and Berbersa Audit Partnership Auditor: Ato Asrat Bekele, Ato Gezahegn Worku, Ato Berbersa Demisse,Ato Sefa Abdella
4	Getachew Kasaye and Co. Audit Firm: Getachew Kasaye and Co. Auditor: Ato Getachew Kasaye
5	Girma Tesfaye and Fasil Audit partner partnership Audit Firm: Girma Tesfaye and Fasil Audit partner partnership Auditor: Ato Girma Tesfaye,Ato Fasil Hailu
6	H.S.T and Company Audit Firm: H.S.T and Company Auditor: Ato Solomon Gizaw, Ato Tekeste Gebru
7	Kokeb Moges and Melkamu Belete Audit General Partenership Audit Firm: Kokeb Moges and Melkamu Belete Audit General Partenership Auditor: Ato Kokeb Moges, Ato Melkamu Belete
8	T.M.S Plus Audit Firm: T.M.S Plus Auditor: Ato Tafese Fremnatos
9	TAY and Co. Audit Firm: TAY and Co. Auditor: Ato Alemayehu Kasa, Ato Yeheyes Bekele, Ato Tesfa Tadesse
10	Zemedhun & Company Audit Firm: Zemedhun & Company Auditor: Ato Zemedhun Adane

Appendix-B Selected Banks and their official websites

BNK_NAME	bnk_id	Financial Years	Official Website
Abay Bank S.C.	1	2014-2018	http://www.abaybank.com.et/
Addis International Bank	2	2014-2018	http://www.addisbanksc.com/
Awash International Bank	3	2014-2018	http://www.awashbank.com/
Bank of Abyssinia	4	2014-2018	http://www.bankofabyssinia.com/
Berhan International Bank	5	2014-2018	http://berhanbanksc.com/
Bunna International Bank	6	2014-2018	http://www.bunnabanksc.com/
Cooperative Bank of Oromia(s.c.)	8	2014-2018	http://www.coopbankoromia.com.e
Dashen Bank	9	2014-2018	http://www.dashenbanksc.com
Debub Global Bank	10	2014-2018	http://www.debubglobalbank.com/
Lion International Bank	11	2014-2018	http://www.enatbanksc.com/
Nib International Bank	12	2014-2018	http://www.anbesabank.com/
Oromia International Bank	13	2014-2018	http://www.nibbanket.com/index.php
United Bank	14	2014-2018	http://www.orointbank.com/
Wegagen Bank	15	2014-2018	http://www.unitedbank.com.et/
Zemen Bank	16	2014-2018	http://www.wegagenbanksc.com/
Enat Bank	17	2014-2018	http://www.zemenbank.com/

```
. xtreg af ifrs size rec cr liq roa lev big4, re ro

Random-effects GLS regression                   Number of obs      =        80
Group variable: bnk_id                          Number of groups   =        16

R-sq:  within  = 0.6573                         Obs per group: min =         5
       between = 0.6697                                        avg =       5.0
       overall = 0.6610                                        max =         5

                                                Wald chi2(8)       =    525.66
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

                                (Std. Err. adjusted for 16 clusters in bnk_id)
```

af	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
ifrs	.2159568	.0637336	3.39	0.001	.0910413	.3408723
size	.2916302	.0826645	3.53	0.000	.1296107	.4536497
rec	-.9666467	.7114912	-1.36	0.174	-2.361144	.4278503
cr	-.2586987	.1144504	-2.26	0.024	-.4830174	-.0343801
liq	-.9956568	.768306	-1.30	0.195	-2.501509	.5101953
roa	-1.046644	4.033068	-0.26	0.795	-8.951312	6.858024
lev	3.657552	1.068981	3.42	0.001	1.562389	5.752716
big4	.1237527	.1061823	1.17	0.244	-.0843609	.3318662
_cons	3.311803	1.96758	1.68	0.092	-.5445841	7.168189
sigma_u	.35234925					
sigma_e	.21167395					
rho	.73480729	(fraction of variance due to u_i)				

```
. xtreg af ifrs size rec liq lev roa big4 iifrXbig_1_1 , re ro

Random-effects GLS regression                   Number of obs      =        80
Group variable: bnk_id                          Number of groups   =        16

R-sq:  within  = 0.6321                         Obs per group: min =         5
       between = 0.7238                                        avg =       5.0
       overall = 0.6961                                        max =         5

                                                Wald chi2(8)       =    896.45
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

                                 (Std. Err. adjusted for 16 clusters in bnk_id)
------------------------------------------------------------------------------
             |               Robust
          af |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        ifrs |   .2909487   .0648377     4.49   0.000     .1638692    .4180282
        size |   .3969317   .0738222     5.38   0.000     .2522429    .5416206
         rec |  -1.578611   .6079189    -2.60   0.009    -2.770111   -.3871124
         liq |  -.8986839    .733224    -1.23   0.220    -2.335777    .5384088
         lev |   2.436542   1.365915     1.78   0.074    -.2406026    5.113688
         roa |  -1.403547   4.558578    -0.31   0.758     -10.3382    7.531101
        big4 |   .1458492   .1114184     1.31   0.191    -.0725269    .3642252
iifrXbig_1_1 |   -.185591    .127822    -1.45   0.147    -.4361176    .0649356
       _cons |    1.89155   2.184899     0.87   0.387    -2.390774    6.173873
-------------+----------------------------------------------------------------
     sigma_u |   .3568328
     sigma_e |   .2212282
         rho |  .72234934   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
        size |      2.43    0.411739
          cr |      2.42    0.413442
         lev |      2.32    0.430464
         rec |      2.18    0.458897
        ifrs |      1.24    0.809341
         roa |      1.22    0.817093
         liq |      1.15    0.868175
        big4 |      1.13    0.882569
-------------+----------------------
    Mean VIF |      1.76
```