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Audit Fees Determinants and Audit Quality in Ethiopian Commercial Banks

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This is to certify that the thesis prepared by *Tamrat Afesha*, entitled: *Determinants of Audit Fees and Audit Quality in Ethiopian Commercial Banks* and submitted 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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Abstract

Audit fee determinants and audit quality in Ethiopian commercial banks

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Addis Ababa University, 2014

The audit profession has been highly scrutinized among researchers and regulators following the fall of giant companies in the West. One of the issues that gained momentum has been to analyze the audit fee structure and the various auditor-client relationships. This study investigates the determinants of audit fees based on variables that are unique to the banking firms and considered important by regulators in a sample of Ethiopian commercial banks. The study also examined whether auditors take in to account factors considered important by the regulatory bank which result in better alignment of both the interests of auditors and the regulatory bank. Furthermore, the study investigates whether abnormally higher audit fees reduce the audit quality. The study used a panel data for eight commercial banks form the year 2004-2012. The panel fixed effect regression result revealed that bank size, liquidity, efficiency, loan growth, capital adequacy and auditor size are the main determinants of audit fees for the Ethiopian commercial banks. With regard to the factors considered important by the regulatory bank, auditors do not seem to consider credit risk in the determination of audit fees. In relation to the audit quality, the study failed to find any significant relationship between the extent of earning management through Loan Loss Provision and abnormal audit fees. This leads to conclude that auditors do not seem to compromise audit quality for the sake of securing abnormally higher audit fees. The researcher recommends auditors to further align their audit fee valuation with the interests of the regulatory bank particularly in respect of credit risk.

Key words: audit fees, regulatory risks, audit quality, earning management, Loan Loss Provision.

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List of acronyms

ABLLP: Abnormal Loan Loss Provision

AIB: Awash International Bank

AICPA: American Institute of Certified Public Accountants

ASC: Audit Service Corporation

ATM: Automatic Teller Machine

BOA: Bank of Abyssinia

CAMELS: Capital adequacy, Asset quality, management efficiency, Earning Quality, Liquidity and Sensitivity to market

CAR: Capital adequacy Ratio

CBB: Construction and Business Bank

CBE: Commercial Bank of Ethiopia

CPA: Certified Public Accountants

DB: Dashen Bank

DW: Durbin-Watson stat

EBTP: Earning Before Taxes and provision

EU: European Union

GDP: Gross domestic Product

IFAC: International Federation of Accountants

ISA: International Standard on Auditing

LGR: banks loan growth rate;

LLP: Loan Loss Provisions

NAS: Non Audit Service

NBE: National Bank of Ethiopia

NIB: Nib international Bank

NPLR: Non-performing Loan Rate

OFAG: Office of Federal Auditor General

OLS: Ordinary Least Square

ROA: Return on Assets

ROE: Return on Equity

ROI: Return on Investment

SEC: Securities and Exchange Commission

UB: United Bank

UK: United Kingdom

US: United States

VIF: Variance inflation factor

WB: Wegagen Bank

Chapter One: Introduction

The pricing of audit services has been an interesting topic for audit researchers, and a plenty of audit studies were conducted to investigate factors believed to have an influence on audit fees in industrial companies. Unlike other industries, banking firms are characterized by the different nature of their operation and greater scrutiny from regulatory bodies. Audit fee researchers (Simunic 1980 and Fields et al. 2004) suggest that audit fees for every company should be a function of client size, business complexities and client business risk. However, the audit fees studies for banking firms left unexamined for two key reasons: first, most of the measurement variables for risk and complexities used in other industries are not suitable for banks. For example, leverage and quick/current ratio measures used in other industries cannot properly capture the risk and complexities involved with banking firms. Secondly, the presence of vigilant regulation cast its effect in the audit service in either of the two ways. On one hand tight regulation of banks may induce auditors to plan their audit in less intensive manner and charge lower audit fees (Boo and Sharma 2008). On the other hand, it also places a higher litigation risk on the auditor because both regulators and owners may bring court action in case of audit failure (Fields et al. 2004; Boo and Sharma 2008).

In view of these basic differences in banks operation and operating environment, most audit fee studies exclude banking firms (Simunic 1980; Palmrose 1986; Francis and Simon 1987, Gerrard, et al. 1994; O'Keefe, et al. 1994; Johnstone and Bedard 2001; Ireland and Lennox 2002; Gonthier-Besacier and Schatt 2007; Thinggaard and Kiertzner 2008; Caneghem 2010 and Lawrence, et al., 2011). While, few recent studies model bank audit fees in terms of factors that are considered most important to

regulatory bodies and find interesting results (fields et al. 2004; Boo and Sharma 2008; Lobo et al. 2010; Ettredge et al. 2011; Cullen et al. 2012; Doogar et al. 2012; Schneider and Tran 2013; Wui 2011; Stefani et al.2013; Akinpelu et al. 2013).

The traditional audit fee studies have also been extended to examine various auditor-client relationships beyond merely identifying audit fee determinant factors. Among others, the collapse of giant companies in the west initiates a large stream of research investigating the economic bond between auditor and the audit client company and the resultant effect on audit quality. This line of research has come up with inconclusive results. While most of the studies find evidence supporting that Non Audit Service (here after NAS) and abnormally higher audit fees in deed reduce the audit quality putting auditors in a compromising position which threaten their independence (DeAngelo 1981; Choi, et al. 2010). Few studies also argue that NAS and abnormally higher audit fees are associated with improved audit quality Davis, et.al, 1993; Defond, 2002). Although various proxies are available, the audit quality measure most commonly used in the audit literature is abnormal accruals, a measure of earnings management (Beattie 2012). Studies in non-financial firms (e.g. Krishnan 2003; Choi et al. 2010; Lim and Tan 2010; Lawrence et al. 2011) use accrual estimation based on Jones accrual model developed in 1991, while Loan Loss Provisions (here after LLPs) are used in banking firms. In this regard several researchers seem to agree that LLPs are the largest and most important accruals for banks (Anandarajan et al 2005; Curcio and Hasan 2008; Pérez et al 2006; Biase and D_Apolito 2012; Lobo et al. 2004)

The Ethiopian audit market environment has unique features unlike the audit market in other developed as well as developing countries. First, the audit market has two sub markets i.e. the external audit of state owned enterprises and the market for private

audit firms authorized by Office of Federal Auditor General (OFAG) to audit business organizations. Second, the audit market is characterized by stiff competition triggered by the bidding system to obtain audit clients among auditors. Third, for a long period of time the international Big auditors have no presence in the country. Finally, there is no strong professional body in charge of regulating the accounting and auditing profession and consistent rules applicable in discharging professional responsibilities (World Bank 2007).

This feature of the audit market is likely to raise many concerns on the external audit practice in the country. World Bank (2007) reported that most of the external auditors in Ethiopia complain audit fees in the country are very low. It is indicated that the thin audit market and the stiff competition among audit firms lowered the audit fees in the country (World Bank 2007 and Mihret 2011). At this point, it is imperative to question what factors determine the audit fees charged by external auditors in the audit of Ethiopian commercial banks. The extant literature revealed that audit fee is a complex issue (Simunic, 1980) and connected to auditor independence and quality concerns. It has also been found that the recent accounting scandals in the west were associated with higher audit and non audit fees, which actually motivate auditors to compromise their independence. Therefore, given the lack of strong professional body and standards coupled with lower audit fee rates in the country may lower the audit quality as well.

Auditing of companies in the regulated industries is associated with a higher litigation risk exposure in case of audit failures. To avoid such a costly litigation, it is argued that bank auditors should take in to account factors that are most important to regulators in their audit fee determination to better align with the interest of regulators. It is known that most countries of the world, be it developing or

developed, bank regulators use CAMELS (Capital adequacy, Asset quality, management efficiency, Earning Quality, Liquidity and Sensitivity to market) for their off-site surveillance mechanism including Ethiopia. In light of this, bank audit fee studies model audit fees around these CAMELS ratios (Fields et al 2004; Lobo et al. 2010; Ettredge et al. 2011). Whether bank auditors in Ethiopia consider these factors, still remains an open question.

This study intends to determine whether the determinant factors identified in prior bank audit fee studies holds for Ethiopian commercial banking sector as well. The study also examines whether bank auditors consider factors important to the regulatory bodies. Further, the study investigates whether the economic bond between the auditor and bank clients leads to a reduced audit quality by compromising auditor independence, using Abnormal Loan Loss Provision (ABLLP) and abnormal audit fees to see the link between level of earning management and economic bond.

This thesis organized in five chapters, the first chapter is the introduction section which includes: statement of the problem; objective of the study; significance of the study; scope and limitation and organization of the study. The second chapter deals with review of related literature while the third chapter is dedicated to the research design of the study. The forth chapter present the analysis and discussion of the results for the study. Finally, the last chapter presents the conclusion and recommendation for the study.

1.1. Statement of the problem

The fall of high profile giant companies at the down of the century in the west (Enron, WorldCom) raised significant criticism on the auditing profession. This is mainly due to the fact that auditors were implicated in many of the cases. It was revealed that auditors drive higher non-audit fees and abnormally higher audit fees which motivate them to lose their independence (Dart 2009, Ghosh, et al. 2006). The banking crisis which started in 2007 also reignited a similar concern on the auditing profession. It has been exposed that many banks lacked transparency and reported profits that were based on under-secured and rather reckless lending (Deloitte, 2012). From the last banking crisis the most underscored accusations on the auditors are: did not take appropriate actions in response to fraudulent misstatements and allowed companies to violate GAAP; issued inappropriate opinions on securitizations and overall insolvency; and used inadequate audit processes (Cullen 2012). Emergent economies are not exceptional from large corporate failures; for instance the corporate failures in the Nigerian financial sector in the early 1990s brought auditors into sharp focus and caused the public to question the role of accountants and auditors (Akinpelu et al 2013).

Despite the significance of banks to the economy, accounting researchers have done little worldwide to investigate the various relationships that exist between the banks and their auditors especially regarding the factors that influences pricing of audit engagement (Fields et al. 2004). The growing Ethiopian banking sector also plays a major role in the economy. For instance, in the year 2006 the Ethiopian banks asset to the country GDP accounted for about 51% (Ncube 2007). Although, the banking industry charted a tremendous growth over the years, the accounting and auditing practice remain at its infant stage with several problematic features. It is undisputable

fact that the Banking industry provides potential market for external auditors operating in Ethiopia. However, how auditors price audit services and their independence has not been researched.

Unlike other countries, the Ethiopian audit market is characteristically different in nature. First, the audit market is characterized by stiff competition partly owing to the reason that, while Audit Service Corporation (ASC) exclusively maintained the audit of state owned enterprises, it also competes in the narrower audit market (audit of business organization) with the private audit firms. Further, the bidding system to obtain audit clients intensifies the level of competition among audit firms. This intense competition is also likely to present in the banking industry, since it is one of the potential markets for external auditors. The stiff competition may obviously reduce audit fees. In this regard, World Bank (2007) reported external auditors in Ethiopia complain that the audit fee in the country is very low and it may not even cover cost of good standard audit. It's also very low when it's compared to the African standard (Beyene 2007).

Second, there is no strong professional body in charge of regulating the accounting and auditing profession and consistent rules applicable in discharging professional responsibilities (World Bank 2007). Finally, for a long period of time the international Big auditors have no presence in the country. Deloitte (2012) reported that among the fastest-growing Africa economies with the exception of Ethiopia and Angola, all the countries have their 10 biggest banks audited by at least one of the international audit firms.

This feature of the audit market may have an important implication on audit fees and the audit quality. Strong professional body and applicable rules are important

components to ensure a standard quality audit. Further the absence of Big international audit firms, which are assumed to provide a better quality audit, limit the audit service to local auditors only. Apart from these unique features, World Bank (2007) reported that Ethiopia does not have a quality assurance and professional indemnity insurance program for auditors and the country has not yet experienced litigation on financial reporting. This may indicate that the quality concern given to the audit service is relatively weak and may serve as a loophole for auditors to reduce audit procedures in their engagement while being competitive in the thin audit market. Client importance and fee dependence regarded as reason for auditors to compromise their independence and quality. Given such intense competition along with low fee levels and the lower concern for audit quality it would be reasonable to expect such threats to arise in Ethiopian context.

Further, banks in Ethiopia also operate under supervision of National Bank of Ethiopia (NBE). The presence of closer regulatory scrutiny may also have a significant impact on the works of external auditors and the audit fee they charge to bank clients. On the one hand the vigilant regulation may motivate auditors to plan less intensive audit (moral hazard) and charge lower audit fees (Boo and Sharma 2008). While on the other hand it also exposes auditors to a higher litigation risk for the fact that both the regulatory body and shareholders may bring court action to the auditor if the auditor fails to provide fair opinion. To this connection, Fields et al., (2004) argued that it is in the interest of many different parties that bank auditors should emphasis factors that are important to regulators. Whether external auditors in Ethiopia price their audit service considering the factors salient to the regulatory body is still an open question.

Literature suggests the audit fee structure is complex and connected to auditor independence and audit quality issues (Simunac 1980). Economic theory indicates that, when an auditor derives a high proportion of revenue from a particular client creates economic bonds on the auditor and causes the auditor to be financially reliant on the client, which can cause the auditor to lose objectivity (DeAngelo 1981). In an effort to resolve this complex issue regulators, researchers and professional bodies has given much emphasis and a plenty of audit fee studies has been conducted.

However, it is unfortunate that no single study conducted to the best of the researcher knowledge, in audit fees and audit quality in the in the giant Ethiopian banking industry. Let alone Ethiopia, which had problematic accounting and auditing practice, countries with advanced practices couldn't stop their high profile companies from falling. Moreover, taking in to account the significance of banks to the economy, their financial transparency has a paramount importance to various stakeholders. Therefore, given such a unique audit environment characterized by stiff competition, regulatory laxities in the accounting profession, and lower audit quality concern afforded in the country, it is imperative to investigate the factors that determine audit fees and its implication on the audit quality in the Ethiopian commercial banks context.

1.2. Research Objective and Hypotheses

The major objective of this panel study is to assess the audit fee determinant factors in Ethiopian commercial banks. Based on factors that are unique to the banking industry and found to significantly influence audit fees in prior studies, the study assesses the factors that external auditors consider in pricing their audit service for bank clients in Ethiopia. Specifically, the study evaluate whether audit fee is influenced by bank size, Liquidity risk, Operating risk, credit risk and capital risk. In addition, the study assesses auditor independence and audit quality issues by examining the relationship between the extent of earning management through abnormal accruals and audit fees. In order to achieve the broad objective of the study, the researcher developed the following eight testable hypotheses (H1-H8):

H1: Banks size has a positive and significant relationship with audit fees

H2: Auditor size has a positive and significant relationship with audit fees.

H3: Banks profitability has a positive and significant relationship with audit fees.

H4. Banks Liquidity risk has positive and significant relationship with audit fees.

H5: Banks Credit risk has positive and significant relationship with audit fees.

H6: Banks operating risk have a positive and significant relationship with audit fees.

H7: Banks capital risk has positive and significant relationship with audit fees.

H8: Banks abnormal accruals has positive and significant relationship with abnormal high audit fees

1.3. Research Methodology

In order to achieve the overall objectives of the study and test the hypothesis formulated in the study, quantitative method is used. From the strategies of inquiry associated with quantitative methods, survey method was adopted in this study. According to Creswell (2009), this approach enables the researcher to test objective theories in the real world by constructing the cause and effect relationship between variables and promote the replication of research. In this study, this approach allows the researcher to examine the impact of various bank specific factors and auditor attributes on the determination of audit fees in Ethiopia by replicating the empirical evidences in other countries. The study used panel fixed effect model for a sample of 8 commercial banks having at least a 9 year working experience (i.e. from 2004-2012). The study used only secondary data sources. Audited Annual report was collected from each bank including one year ahead data for some variables in which lagged values are required in the regression. For items which are not reported in the bank's Annual report, the study used data from NBE. Data regarding audit firms was also obtained from OFAG. The data obtained through structured document review was analyzed through Eviews 6 software package.

1.4. Significance of the study

As far as the researcher knowledge is concerned, this study is a pioneer in Ethiopia regarding commercial banks and their relationship with auditors. Therefore the study would have a significant value for various stakeholders. First, the study provides a significant value in giving an insight for external auditors and firms in the banking industry as to how audit firms determine the audit fees for their clients. Second, as (Firth 1997) suggested knowledge of determinants of audit fees should be of interest and importance to suppliers and users of the audit services as well as the regulators,

because, this would assist the auditors to examine their cost structure, predicting future fees and measure audit efficiency.

Thirdly, because bank auditors are subject to such extensive regulatory scrutiny, bank audit fees are likely to be tied to regulatory risks. If such ties serve to moderate the litigation risks associated with bank audits, this paper can be useful to accounting firms as they evaluate their litigation exposure in this high-risk industry. Fourthly, this paper provides an insight whether the economic bond (measured through abnormal audit fee) lead to the lower audit quality (proxied by the extent of earning management) between auditors and client banks.

Finally, this study contributes to the extant knowledge base because, it can add to scanty works on determinants of audits fees in the banking sector globally and also give an insight to pricing of audit service in financial industry from developing nation context because previous studies used data from US, Europe and other Asian countries (Field, et al., 2004; Boo and Sharma 2008 and Swanson, 2008).

1.5. Scope and limitation of the study

This study is confined to identify the factors that influence the determination of audit fees and audit quality in Ethiopian commercial banks. The study focuses only on commercial banks for three reasons. First, External audit is highly required for commercial banks as a monitoring mechanism from both owners and regulatory bodies. Second, audit fee data in other industries is not publicly available and difficult (if not impossible) to access. Thirdly, most of the variables used in this study are peculiar to the banking industry because of their different nature of operation.

However, the results of the study may suffer from some limitation. First, the model adopted in this study is developed in the context of developed countries though, the

study tried to contextualize in the country context; it may not well explain Ethiopian audit practice. Second, for the reason that some items are not consistently reported in the financial statement of all banks the study used calculations to best proxy those items for example (capital adequacy ratio and loan charge offs). This may induce some biases on the reported result. Third, since the measure used for earning management Abnormal Loan Loss Provision (ABLLP) and economic bond (Abnormal Audit Fees) is taken as the residuals from their base models in which its accuracy relies on the specification of the underlying models, thus the result may be biased probably for uncontrolled methodological issues. Lastly, the study failed to provide additional sensitivity analysis due to the lower sample size to undertake such a test.

Chapter Two: Literature Review

The first chapter introduced the problem to be investigated in this study along with purpose and research hypothesis. In order to put the study within the context of the existing literature, the subsequent section of this chapter present the review of both theoretical and empirical studies related to audit fee determinants and audit quality.

Starting from the pioneer work of (Simunic 1980) a plenty of studies investigate the determinants of audit fees. Client size, client business risk, client business complexity has been found significant invariably in most of the previous studies. Even though, the results were not conclusive auditor size/reputation, profitability, client industry, Non- audit fees were also found to significantly explain the variation in audit fee. With regard to the risk and complexity measures uniquely employed in bank audit fees studies, it has been found that Capital adequacy, Asset Quality, Management Efficiency. Earning quality and Liquidity (CAMEL) were found significant determinants of audit fees.

The chapter is organized in to three sections. The first section present the theoretical under-pinning related to audit pricing; audit quality; auditor independence issues and determinants of audit fees. The second section, deal with empirical studies regarding the determinants of audit fees and related issues from the extant literature. The final section presents the summary the literature review and identification of the knowledge gap.

2.1. Theoretical Review

Audit fee is the amount paid to the client firm auditor for the annual audit of financial statements. Audit pricing is a complex issue that takes in to account various clients and auditor attributes. At the heart of pricing the audit service auditors should

consider the quality of their service for the fact that various stakeholders rely on the audited financial statements for various decision and failure to account for such issues may lead to severe litigation in the advent of audit failure. DeAngelo (1981) defined audit quality as the market-assessed joint probability that an auditor will discover an error in the client's account and report the error to the third parties. The probability to discover error depends on the auditor ability, experience and auditor audit technology while the probability to report lies on the auditor independence.

The extant literature identified various auditor client relationships which potentially impacted the audit quality and auditor independence. Especially following the accounting scandals in the west the auditing profession is highly scrutinized by researchers. Among others NAS, abnormal high audit fees, audit tenure and auditor size is found to impact audit quality and independence. The first section present the theories related to audit pricing, audit fees, audit quality and independence issues. In the second section, literatures related to factors that determine audit fees are reviewed in a considerable detail.

2.1.1. Audit pricing

Before the theoretical discussion of the determinants of audit fees it is necessary to take in to account demand and supply side of the audit service itself. The demand for audit service arises from company owners, outside investors, company managers, governments and general public for their various decisions. But there exist agency conflict and information asymmetry issues which paradoxically complicate the audit service. For example, manager's manipulating short-term earnings at the expense of long-term performance in order to receive a bonus. Outside investors also need information which truly represents the company performance to make investment decisions. However, external auditors are hired by company managers not by owners

or outside investors. As a business it is obvious that both the audit firm and the client company have the same goal i.e. maximizing profit.

To maximize profit, it is clear that audit firms have to gain more customers and minimize audit procedures. It means in certain cases they may compromise with client's managers. As a result, audit independence may be impaired. However, it simultaneously means auditors face the risk of litigation and being revoked their audit practice (like Andersen's case in Enron scandal). This fact entails that auditing firms have to consider cautiously loss and profit to decide their audit fees.

According to Diamant (2000) there are four types of audit contract regulated in legal documents and presented in practice: fixed price, contingent fee, benefit in kind and hourly billing rate. Contingent fees are fees calculated on a predetermined basis relating to the outcome or result of a transaction or the result of the work performed (OFAG 2009). The nature of audit services points out that auditors should satisfy not only managers but also investors. Meanwhile, the interests of managers and investors are so different, even antagonistic. Admitting the fact that contingent fees impair auditor's independence, many regulatory bodies prohibit receiving contingent fees by accounting firms (SEC, 2004, OFAG, 2009, EU 2011).

2.1.2. Audit Fee

The Securities and Exchange Commission's, Final Rule defined audit fee as the fees paid for annual audits and reviews of financial statements for the most recent fiscal year. Chersan et al. (2012) also defined audit fee as the sums payable/paid to the auditor, for the audit services offered to the auditee. Meanwhile, according to the rules of ethics of public accountant's compartment, the fee amount may vary depending on the risk assignment, the complexity of services provided, level of expertise required to

perform such services, the related cost structure of CPA firm and other professional considerations. In this regard, Code of Ethics for Professional Accountants (IFAC, 2010) provides that “when entering into negotiations regarding professional services, a professional accountant in public practice may quote whatever fee is deemed appropriate” (Section 240). In the same manner, the Ethiopian Code of Ethics for Professional Accountants (OFAG 2009, p 47) states “It is in the best interests of both the client and the professional accountant that the bases on which fees are computed”. However, the code requires billing arrangements to be clearly defined in writing, before the commencement of the engagement to help in avoiding misunderstandings with respect to fees.

However, all the three code of ethics for professional ethics for accountants i.e. (OFAG 2009), (AICPA, 2009) and (IFAC, 2010) remind the threats that may arise with regard to the fundamental ethical standards i.e. independence, objectivity and professionalism, when different level of fee are billed. It should be noted that if an auditor charges a lower fee than another auditor, this is not unethical, if the audit is carried out at an analogous quality level.

2.1.3. Audit Quality and Independence

Zerni, (2009) explained audit service as a unique among other professional services for two major reasons. First, auditors are hired and paid by the client, but their product is really used by the third-parties (e.g., investors), to whom they owe a standard of care. Second, the quality of an audit cannot be directly observed prior to contracting and, in general, not even after the audit is conducted. The only observable outcome of the audit process is the issued audit report, which, at least in its standard form, does not contain much information about the audit quality.

DeAngelo (1981) defined audit quality as the market-assessed joint probability that an auditor will discover an error in the client's account and report the error to the third parties. She also suggested the probability that a given auditor will discover a breach depends on the auditor's technological capabilities, the audit procedures employed on a given audit, the extent of sampling, etc. Further, the conditional probability of reporting a discovered breach is a measure of an auditor's independence from a given client.

Several researchers investigated the factors which affect audit quality. Size and independence related issues (i.e. the proportion of audit fees received from a particular client, auditor tenure, the provision of NAS and other audit client relationships) are given emphases as a determinant of audit quality.

Needless to say, independence is the corner stone of the accounting profession. As Moore et al. (2000) put it independence is the only justification for the existence of accounting firms that provides audit service; if it were not for the claim of independence, there would be no reason for external auditors to exist, since their function would be redundant with that of a firm's inside auditors. So far, no formal 'theory' of auditor independence exists and thus, until recently, analytical models concerning independence have been very limited (Beattie and Fearnley n.y).

DeAngelo, (1981p.186) defined auditor independence as 'the conditional probability of reporting a discovered breach'. Because independent behavior (or independence in fact) is generally unobservable, the appearance of independence assumes prime importance among stake holders. This suggests that auditor independence is synonymous with auditor objectivity and the ability to withstand client pressure to acquiesce to substandard reporting.

Several factors have been identified in literature which may influence auditor's independence such as lack of stricter regulations, the nature of the auditor-client relationship, extended audit tenure, the provision of NAS and competitive pressures leading to lowballing /price cutting.

In addition to the audit service, audit firms provide various NAS such as tax consultancy, system consultancy, management advice, international business advice, human resource management, and financial and investment consultancies. The collapse of the giant US corporation in the year 2002 (Enron, Worldcom and Global Crossing) marked a black spot on the auditing profession as a whole. Arthur Anderson, the auditor of these collapsed companies was highly criticized for over relying on Non audit fees and compromising independence. Investors, regulators and researchers questioned whether the reliance on higher Non audit fees as a source of revenue compromise auditors independence than ever before.

Accounting scandals of Enron and other giant companies in the west inspire regulators and researchers to scrutinize the auditing profession. Economic dependence (proportion NAS to total audit fees) of external auditors has received researchers attention. It is argued that provision of NAS by incumbent auditors impair auditor independence. First, NAS fees make auditors to be financially dependent on their client, and as a result weaken to resist management pressure for fear of losing their business. Secondly, the consultancy nature of NAS puts auditors in a compromising position which potentially threaten their independence about the transaction they audit. In addition, Positive abnormal audit fees or the presence of positive client specific quasi rent creates an incentive for the auditor to compromise independence with respect to a specific client (DeAngelo 1981; Choi, et al. 2010; DeFond et al. 2002)

However, a counter theoretical argument also suggests that auditors have market-based institutional incentives to act independently. The expected costs of sacrificed independence include the reputation loss and litigation costs associated with audit failures Defond (2002). The size of the audit firm is often considered when examining the issue of fee dependence. For example, DeAngelo's (1981) economic model states that incentives for an auditor to compromise independence will be a balance between the importance of the client and the litigation and reputation costs which could result from breached auditor independence. She further argues that smaller accounting firms may have bigger incentives to compromise independence than larger accounting firms as smaller firms have fewer clients and so each client represents a larger proportion of income to the auditor.

Ahmad et.al, (2006) suggested positive and negative abnormal fees create different incentive effects. For clients with positive abnormal fees, auditors are more likely accept client pressure as abnormal audit fees increase, whereas for clients with negative abnormal fees, auditors are unlikely to compromise audit quality. Regarding the relationship between audit fees and Non audit fees, (Simunic (1984), cited in Ahmed et, al (2006)) argues that negative relationship among audit fees and Non audit fees is due to the knowledge spill over from the provision NAS to audit. In other words the knowledge gained through the provision of NAS can be utilized in the audit. The client would benefit from the knowledge spillover in the form of lower audit fee.

Apart from level of NAS and audit fees, auditor size has been the most commonly used quality surrogate and it has been employed in a vast body of prior audit research. DeAngelo (1981) analytically shows that auditor likelihood of reporting breaches (i.e. independence) increases with audit firm size. Thus, according to the DeAngelo's

framework, audit quality is a function of the (market-assessed) competence and independence of the auditor. She proposes that the auditor's investments (start-up costs) in the client relationships enable the incumbent auditor to earn client-specific quasi-rents and that these quasi-rents represent the collateral that is lost if 'promises' are not kept (i.e. in case of audit failure). According to this framework, auditors with a larger number of clients possess greater total collateral and as a consequence of avoiding audit failure arguably report a more independent opinion on client's accounts (DeAngelo 1981).

2.1.4. Loan Loss Provision and Earning management

Banks use loan loss provisions to create reserves in order to cover the expected (latent, inherent or incurred and not yet individually identified) losses embedded in their loan portfolios. In principle, LLPs must be used to cover expected losses; however in practice due to bank managers discretion in estimating this item, provisioning policy can become an important tool to pursue goals that are different from a fair representation of the expected evolution of a bank's loan losses (Pérez et al. 2006; Curcio and Hasan 2008)

Earnings management implies the manipulation of reported earnings in such a way that the bottom line of the profit and loss account does not represent the real economic result of a bank's activity. Various studies find evidence that bank managers use the discretionary component of LLP as a tool for earning management (Anandarajan et al 2005; Curcio and Hasan 2008; Pérez et al 2006; Biase and D'Apolito 2012; Lobo et al. 2004). As (Lobo et al. 2004) suggested bank LLP is well-suited to studying earnings management for the following reasons. First, Bank managers have considerable discretion in estimating LLP. This discretion allows them flexibility in using LLP for income-increasing or income-decreasing earnings management, or for

smoothing earnings. Second, LLP is also by far the largest and most important accrual for banks, thus affording bank managers wide latitude in its use.

Several bank earning management studies (see Walter 1991; Anandarajan, et al. 2005; Pérez et al. 2006; Curcio and Hasan 2008; Balla et al. 2012) provides the central incentives (reasons) to use LLP as a management tool. Capital regulation, income smoothing, signaling and taxes are the most underscored reasons for banks to engage in earning management through LLP. Besides, Walter (1991) noted the desire to limit the expenses of estimating future loan losses continues to provide an incentive for banks to hold reserves at levels that differ from their best estimates of the losses inherent in their loan portfolios.

Pérez et al. (2006) indicated income smoothing as one of the primary objectives of earnings management which aimed at reducing the variability of net profits over time. During good years managers use some discretionary items in the profit and loss account in order to decrease the amount of profits. During bad times, those funds can be used to prop up the bottom line. Several reasons could be forwarded for banks to engage in income smoothing. From the risk perspective income smoothing implies less volatile earnings and this reduced volatility is assumed to convey a signal of lower risk (Anandarajan, et al. 2005). Income smoothing also helps banks to maintain higher stock prices, and help bank managers meet their compensation targets (Balla et al. 2012). Further as (Pérez et al. 2006; Curcio and Hasan 2008) suggested banks are subject to minimum capital requirements and income smoothing can be the result of accounting practices aimed at meeting these requirements. As Balla et al. (2012) states from a prudential perspective, income smoothing could reduce the negative impact of asset volatility on bank capital. Further, Curcio and Hasan (2008) conjectured Capital management through loan-loss provisions based on the idea that bank managers use

provisions to avoid the costs associated with the violation of capital adequacy requirements.

Higher LLP implies a reduced Tier 1 capital because of lower retained earnings, that could have otherwise been obtained had it not been expensed. Further, Since LLP are included only to a limited extent incorporated in the calculation of Tier 2 capital, higher provisions would result in Lower risk adjusted capital ratio. Given that the whole of LLP is not included as part of Tier 2 capital and any deduction from the nominator (capital) means a reduction in the risk weighted capital adequacy ratio.

2.1.5. Determinants of Audit fees

Like the suppliers of other professional services auditors take into account both the cost of delivering audit services and the quality of audit services when pricing their services. Consistent with this view, Simunic (1980) was the first to develop an extensive model of audit fees. In examining the competitiveness of the audit market, he hypothesized and found factors relating to auditee size, auditee complexity, auditee asset composition, auditee industry, auditee risk and financial distress, auditor's tenure and auditor type (Big 8/6/5 vs. non-Big 8/6/5) to be associated with audit fees. Simunic's study has initiated a large stream of research replicating and extending his work. Besides assessing the competitiveness of the audit market (see e.g. Francis 1984,) these studies have investigated a multitude of issues, such as auditor size effects e.g. (Palmrose 1986; Francis and Simon 1987), pricing initial audit engagements e.g. (Craswell and Francis 1999), the provision of non-audit services e.g. (Palmrose 1989), Audit Pricing, Law-balling e.g. (Kanodia and Mukherji 1994), and client participation e.g. (O'Keefe et al. 1994).

Although the studies' findings are mixed with respect to some of these issues, in general the audit fee model is fairly robust across time periods, countries and sample composition, and a number of results are consistent across the majority of audit fee studies. For instance, auditee size, auditee complexity, auditee asset composition and auditee financial distress are all positively associated with audit fees. Furthermore, Big 8/6/5 auditees pay significantly higher fees than do non-Big 8/6/5 auditees.

As mentioned above, theories of audit fee determination have been found in previous studies. In this section the study present factors which have been empirically proven to have strong relationships with audit fees. Like any other service, audit remuneration depends on the demander - Auditee and the supplier – auditor attributes. Thus, the theoretical underpinnings from both audit client and auditor perspective are discussed in this section. The most important factors attributable to the client/Auditee in causing variation in audit fees include client size, client business risk, and business complexity, nature of the assets, client industry, financial distress and internal control. Whereas, audit firm size, reputation and competition in the audit market has been the most important factors identified in prior studies from the auditor perspective.

2.1.5.1. Client size

Client size has been found to be the most significant variable in explaining the variation in audit fee in the extant literature. For instance, in the pioneer work of (Simunic 1980) size alone explains about 57% of the variation in audit fees. O'Keefe et al. (1994) also noted that in previous studies client size alone explains more than 50% of the cross-sectional variation in audit fees, although many other client characteristics are correlated with size.

Obviously, one can expect such a positive relationship between audit fees and client size to exist, since the external audit firm is expected to perform more audit work (giving rise to a higher number of hours billed) as the client size increases to ensure the performance of an adequate amount of compliance and substantive testing. This increase in audit effort is naturally expected to be associated with an increase in the amount of audit fees. In addition, large firms are more likely to be subject to public scrutiny, higher agency and political costs and are therefore a higher risk for the auditor (Naser et al., 2007). For this reason, larger companies try to minimize the agency cost by assuring investors and lenders by employing a reputable audit firm from the Big ones that costs more than the smaller one.

Simunic (1980) justified the positive relationship between Auditee size and audit fee on the ground that the Auditee stock of assets seems more closely related to risk than would an accounting flow measure, such as revenue, because defective financial statements which result in a lawsuit frequently involve some deficiency in asset valuation. External auditors tend to approach the audit process through the ending balance sheet, relying on the fact that verification of balance sheet components indirectly verifies reported income. Therefore as the size of the client company increase, the required level of sample which comprise the assets will also increase.

However it is also argued that large companies adopt advanced accounting and internal auditing system. These in turn reduce the work load of the audit firm. In addition, the auditors' concentration in a particular industry may create specialization and economics of scale in the auditors and hence a lower audit fee.

Despite the positive relationship between client size and audit fee, studies revealed the relationship is unlikely to be linear i.e. as the client size increases audit fees would

increase at a decreasing rate (Simunic 1980; Palmrose 1986; Francis and Simon 1987; Davies et al. 1993; O'Keefe, et al., 1994). To this connection (Gerrard et al., 1994) argued very large audit clients represent an opportunity for the audit firm to benefit from certain economies of scale in reducing the amount of audit work performed, and consequently being able to charge lower audit fees. Specifically (O'Keefe, et al., 1994) contended that the nonlinearity is caused by both an underlying production nonlinearity which exists for all labor inputs and substitution of relatively cheaper labor (audit staff vs. seniors and managers) as client size increases. To avoid the *heteroscedasticity* problem that may arise from the nonlinear relationship between audit fees and asset size, it is usual in prior studies to regress the natural logarithm of fees on the log of total assets and other (usually not logged) explanatory variables.

As a measure of audit client size, it is conventional in numerous prior audit fee studies to use total asset (logged). However, a handful of studies also employed other measures like turnover (e.g. Thinggaard and Kiertzner, 2008), no of employee's (e.g. Naser, et, al. 2007), revenue e.g. (Maher et al, 1992).

2.1.5.2. Client business risk

According to the audit pricing model of Simunic (1980), the audit fee is a function of the audit effort and the auditor's client specific risk. Numerous previous studies examined the relationship between audit fees and the client business risk. It has also been found to be a significant explanatory variable in explaining the variation in audit fees in most of those studies. (See Simunic 1980; Maher et al, 1992; O'Keefe, et al., 1994; Johnstone and Bedard 2001; Bell et al 2001; Ahmad et al., 2006; Gonthier-Besacier and Schatt, 2007; Naser et al., 2007; Al-Harshani 2008; Thinggaard and Kiertzner, 2008; Caneghem, 2010; El-Gammal 2012 for review).

As per (AICPA 1992) cited in (Lyon and Maher 2005)) business risk has two components: (1) the client's business risk, which is associated with the client's continued survival and well-being, and (2) the auditor's business risk of being associated with a particular client irrespective of whether an audit failure is asserted. In addition, (Arens and Loebbecke (2000) cited in Lyon and Maher 2005)) define business risk as "the risk that the auditor or audit firm will suffer harm because of a client relationship even though the audit report rendered for the client was correct" (p. 135).

Much of the prior studies focus on litigation risk, which is the risk of incurring liability payments and the risk of damaged reputation for the quality of its services (see for review O'Keefe, et al., 1994; Johnstone and Bedard 2001; Bell et al. 2001)). Others for example, (Lyon and Maher 2005) have also examined relation between business risk and audit fees by examining whether a particular type of potentially risky client misconduct that is not illegal relates to higher audit fees.

Stice (1991) cited Pratt and Stice (1994) developed and test a model to predict litigation against auditors, which includes both client and auditor characteristics. Client characteristics include financial condition, levels of accounts receivable and inventory, sales growth, market value of equity, and variability in the client's stock returns. Auditor characteristics, which included auditor quality, independence, and tenure, were predicted to relate to litigation through their effects on the likelihood of an alleged audit failure.

Client characteristics are given emphasis in audit research based on the notion that auditors assess litigation risk in the planning stages of the audit and in the pricing of the audit service (Simunic 1980; Francis and Simon 1987). In addition, (Bell et al.,

2001) argued that legal cost of business risk do not include legal costs arising from failure to conduct an appropriate audit. Further, Pratt and Stice (1994) also contended that ~~it~~ would be difficult for auditors to objectively recognize their own levels of quality and independence in their judgments about litigation risk, the audit plan, and client fees” (p. 641) noting that auditors should consider client characteristics when assessing litigation risk, planning audit procedures, and pricing audit services.

Auditing standards (e.g., International Standard on Auditing ISA), No. 200) suggest that auditors should respond to risk by altering the nature, timing, and extent of audit procedures. If a particular client is perceived to have higher business risk, the probability of material misstatement will also be higher; this in turn will require a greater effort on the auditor part to attain a target level of assurance. As (O'Keefe et al., 1994, pp. 249) put it, ~~g~~reater business risk of the client company, motivates the auditor to produce a more ~~defensible~~” audit, involving production of better documentation and, perhaps, tests which are helpful in forming legal defense”. Further, in a competitive equilibrium, risk should prompt auditors either to charge an insurance premium to compensate future losses or to increase audit effort in defense of future litigation or reputation losses, or both (Simunic 1980, Pratt and Stice 1994, Bell et al., 2001).

Bell et al., (2001) suggested that the cost of business risk can be transferred from audit firms to client companies in either ways:

- I. Explicitly through a firm's assessment of a company's risk and inclusion of the risk in the firm's bid, or

- II. Implicitly where the available information about the riskiness of the company is efficiently impounded in a market-determined audit price and explicit consideration of a company's risk is not required for an individual audit firm.

In the extant literature, researchers use alternative proxies to measure the client business risk including leverage, operating loss, receivables to sales, liquidity, nature of the assets, sales growth, market value of equity, and variability in the client's stock returns. In addition some studies used market based risk measure (e.g., Nikkinen and Sahlström 2003). Consistent with the theory (O'Keefe et al., 1994; Pratt and James 1994; Bell et al., 2001; Johnstone and Bedard 2001; Lyon and Maher 2004; Al-Harshani 2008; Naser et al., 2007; Gonthier-Besacier and Schatt 2007; Caneghem 2010; Thinggaard and Kiertzner 2008; El-Gammal 2012) found a Positive relationship between audit fees and business risk.

However, there exists no clear cut answer which one or more of several possible risk measures should be used. The results in the prior studies are inconsistent with regard to the various measures of risk and their relationship with audit fee. Moreover, the impacts of the variables in explaining audit fees vary across countries. To this connection, Nikkinen and Sahlström (2003) suggested culturally sensitive and market specific variables could potentially have a significant impact on the level of audit fees paid.

A client's financial condition is related to the probability of both capital provider losses and the auditor being held responsible for those losses. Receivables and inventories are "risky" balance sheet components for the fact that they require specific auditing procedures like confirmation and observation. Further, the valuation of these items is a complex task, requiring a forecast of future events. Thus, client risk varies

cross-sectionally with the relative size of receivables and inventories in different auditee balance sheets.

Extant theory suggests that audit fees should be a function of the size of the client, the risk of the client, and the complexity of the client's operations. However, as noted by fields et al (2004) that what are termed bank regulatory risks are likely to possess elements of both client risk and client complexity. For example, a bank could be viewed as risky because it has complex contracts with high-risk borrowers. He further argued that it would be extremely difficult, if not impossible, to disentangle the audit fee effect attributable to client complexity and the audit fee effect attributable to client risk. As a result, proxies developed in terms of their regulatory constructs (i.e., risks), their influence on audit fees is likely to stem from both factors (i.e., risk and complexity). These regulatory risks in the bank audit literature developed from the CAMEL (Capital adequacy, Asset Quality, Management Efficiency and Liquidity) frame work because regulatory bodies usually use this rating for their off-site surveillance.

2.1.5.3. Business Complexity

Prior researchers (Naser et al., 2007; Thinggaard and Kiertzner 2008; El-Gammal 2012; O'Keefe et al., 1994; Ahmad et al., 2006; Gonthier-Besacier and Schatt 2007) documented empirical results indicating that audit fees are significantly influenced by the level of the audit client complexity while (Al-Harshani 2008) didn't find such a significant relationship. Client business complexities usually considered in audit fee research on the ground that companies having complexity in their operation (e.g. multinational companies, subsidiaries in different locations, nature of their assets, nature of transactions etc.) require more audit effort/time and the audit fee for such companies is also expected to increase accordingly.

Thinggaard and Kiertzner (2008, p. 147) categorized client business complexity as follows:

- i. **Complexity of substance:** complexity in relation to the verifiability of financial statement items (typically inherent risks) by an auditor. This risks are associated with factors such as the nature of transactions, the accounting criteria for recognition and measurement, and the degree of necessary professional judgment regarding the potential importance of the outcome of future events
- ii. **Technical (formal) complexity:** Complexity in relation to the presentation of financial statements after all questions of recognition and measurement has been dealt with. This component is often approximated by group complexity (number of subsidiaries, number of associated companies, and proportion of foreign assets).

With regard to the first category it is presumable that certain financial statement items present potential risk for the auditor. In line with this view researchers usually use receivables and inventories as a proxy for financial statement items for which it is often difficult to obtain sufficient and appropriate audit evidence about whether they are free from material misstatement (Simunic 1980; Thinggaard and Kiertzner 2008). Auditing such accounts usually involve ‘harder to review’ transactions which require confirmation and observation. Further, the valuation of these items is a complex task, requiring a forecast of future events. Therefore, the auditor is required to exert higher audit effort and longer audit hours for such accounts which in turn results in higher audit fee.

The second category (Technical complexity) has received more emphasis in prior audit fee studies. Simunic (1980) pointed out that decentralization and diversification of the audit client company increase the number of decision centers in an organization whose activities need to be monitored and hence increase complexity. Ananthanarayanan (2011) also suggested that companies that have more business segments, geographical segments and subsidiaries increase the complexity of the business. He also argued that additional segments and subsidiaries entail a greater audit effort and increase hours of the audit work because of the different dimensions of each segment. More segments and subsidiaries mean longer audit hours, extended travel time, additional time to learn the possible different system in place at each subsidiary and additional time for consolidating the data at a firm level. Foreign based subsidiaries further add the work load to the auditor.

Generally, as the audit client becomes more complex, more time and effort is needed to perform the external audit work. This is true because a more complex audit client means a more diverse organizational structure, and harder to review transactions. This increased audit effort is expected to lead to an increase in the level of audit fees.

Prior studies used various proxies for companies complexity e.g. (simunic 1980; Francis and Simon 1987) Number of subsidiaries, (Caneghem 2010) used the number of industries in which the company is active, (Caramanis and Spathis 2006) ratios receivables to sales, (Naser et al., 2007; Gonthier-Besacier and Schatt 2007) the ratio of inventories and receivables to sales and the growth levels, (Al-Harshani 2008) number of audit locations visited by external auditors.

2.1.5.4. Client profitability

In prior studies profitability is usually used as a measure of client risk. 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. Such companies are likely to engage in questionable activities (earning manipulations) and this may result increased risk exposure to the auditor (Ananthanarayanan 2011). The poorer the performance of the firm, the higher the risk for the auditor and the higher the audit fee would be.

Some researchers for example, (Joshi and AL-Bastaki 2000) cited in Naser et al., (2007)) also argue that companies with a higher level of profit are subject to a further inspection of the related revenue and expense accounts. This may require additional audit effort/time on the auditor part and hence the auditor charges a higher audit fee to a higher profitable company.

Profitability is measured by both rate of return, and existence of a loss in recent periods (ROI, ROE, ROA and loss in recent periods). Prior studies show mixed results on the relationship between client profitability and audit fee. For e.g. (Simunic 1980; Caneghem 2010; Ireland and Lennox 2002) profitability proxied by recent period loss, (Ebrahim 2010) using ROA, reported profitability significantly influence audit fee. In the contrary, (Simunic 1980) using (ROA), (Chen and Elder 2001) using (ROI), (Naser et al., 2007) using (ROE) revealed insignificant result. Here, it is important to note virtually all the empirical studies found significant result when profitability is proxied by recent period loss other than the return measures. To this connection

(Simunic 1980) result suggested that audit fee do not vary continuously with the profitability of auditees rather, the auditor's expected share of residual liability losses seems to increase only with evidence of significant deterioration in the auditee's operations or prospects.

2.1.5.5. Client industry

It is recognized that there are differences in the auditing of particular industries, but the exact nature and direction of these differences have not been developed theoretically (Gerrard et al., 1994). Even if there is no theoretical base to model client industry as explanatory variable some studies tried to investigate the relationship between client industry and audit fees (see for review, simunic 1980; Gerrard et al., 1994; Palmrose 1986; Naser et al., 2007; Caneghem 2010)). Palmrose (1986) noted that client industry effect may be attributed to differences in risk levels across industries. For example, risks and costs of the audit of a financial company may differ considerably from others because they operate in a different regulatory framework (McMeeking 2007). Some others for example, Gerrard, et al, (1994), indicated difference in audit fees across industries may be due to the inherently different asset structure in the various industries.

Based on review of audit fee studies (Hay 2006) observed that Utilities, financial institutions and mining companies tend to have lower fees than companies in other industries while manufacturing companies have higher fees. Naser et al., (2007) revealed that companies operating in the service sector tend to pay lower audit fees than those operating in manufacturing and financial sector.

Generally, the determinants discussed so far holds for all companies. However the proxies used to measure these factors differs somewhat for banking institution

because of the different nature of operation. Following (Fields et al 2004) it has become usual to model risk and complexity proxies around CAMEL ratios for the fact that these ratios are important for regulators in most countries and used as off-site-surveillance mechanism. It is believed that failure to account for such regulatory concern may lead the auditor to face higher litigation risk from both regulators and owners.

2.1.5.6. Audit firm size

Several studies examined whether big audit firms charge higher fee than the non big ones for their service. Typically the empirical studies revealed the existence of fee premium for Big auditors. In those studies, Different explanations are also given for the existence of such a fee premium. A premium price can reflect compensation for a quality audit (for being connected with a well-known market brand in the capital market); a premium for higher litigation risk (deep pocket hypothesis) or it may also be a reflection of oligopolistic market structure (non-competitive pricing hypothesis).

First, Several re-searchers in auditing (e.g., Dopuch and Simunic (1980; 1982) cited in (Palmrose 1986; De- Angelo (1981)) have viewed audit services as quality-differentiated, but the quality is difficult to measure. When quality is difficult to measure in a quality differentiated market, market participants have incentive to devise quality surrogates which minimize measurement cost. To this connection, one of the suggestions is to use auditor size as a quality surrogates on the ground that larger audit firms (in terms of market share) provide quality audit than their smaller counterparties.

It is argued that Audit quality is the joint probability that a given auditor will both (a) discover a breach in the client's accounting system(auditor competence), and (b)

report the breach (auditor independence) (De-angelo 1981). Large audit firms (auditors with more clients) have more to lose (i.e. termination of other clients, reduced fees for remaining clients, loss of reputation, etc.) by failing to report discovered misstatements in financial statements. Based on these considerations, large audit firms are assumed to provide audits of a higher quality than small audit firms. This collateral aspect increases the audit quality supplied by larger audit firms.

Second, the “deep pocket” hypothesis (“Big” audit firms are “wealthier” than “non-Big” audit firms) suggests in the case of a client firm’s bankruptcy, investors/shareholders would be more willing to sue a Big Four firm in order to recover a portion of their investment. This higher level of litigation risk exposure is expected to be associated with higher levels of external audit fees and these additional costs correspond therefore to the sum of an “insurance premium” against future legal proceedings.

Third, the non-competitive pricing hypothesis suggests that, especially in the large clients segment of the audit market, “Big” audit firms face less competition than “non-Big” firms and therefore are able to charge higher audit fees.

However the empirical studies revealed mixed result regarding the relationship between audit fee and auditor size. Simunic (1980) found no significant differences in audit fees between “Big” audit firms and “non-Big” audit firms for both large and small audit clients in US. In addition, Gonthier-Besacier and Schatt (2007) in France, Al-Harshani (2008) Kuwait, and Caneghem (2010) Belgium did not found the Big4 fee premium.

On the other hand, Palmrose (1986) reported that audit fees of “Big” audit firms were higher than that of “non-Big” audit firms for small audit clients. Francis and Simon

(1987) found the existence of a Big Eight price premium with respect to both second-tier national auditors and local/ regional auditors. They also suggest given the assumption of competition in the small auditee market segment, higher Big Eight prices imply Big Eight product differentiation.

Most of the major international audit firm networks had presence in Ethiopia prior to 1974. With the introduction of socialist system in 1974, all the international audit firms closed their offices in Ethiopia (World Bank 2007). Currently one of the Big 4 international audit firm Deluttee get access to the audit market through HST and company (a local audit firm). Most of the audit fee studies categorize auditor size based Big / Non Big. However, since there is no as such Big auditors in Ethiopia the researcher will classify size/reputation audit firm based on the license Grades(Grade A, B, C) given by OFAG.

2.2. Empirical Review

Several empirical studies address the determinants of audit fees in both industrial and financial companies though recently evolving for the later one. Recent studies also extended audit fees studies to investigated audit quality and independence issues. This section presents the review of empirical studies in two sections. The first section deals with audit fees studies in industrial while the second section review studies for financial companies.

2.2.1. Audit fee studies in non-financial companies

A plenty of empirical studies has been conducted to identify the factors that may influence audit fees especially in the developed countries. These factors have been investigated in literature from both the client (Auditee) perspective as well as the auditor perspective. The major factors that influence audit fee from the client

perspective include client size, client business risk, profitability, business complexities and client industry. On the other hand Auditor size/ reputation and computation also influence audit fee from the auditor perspective.

Bell, et al., (2001) studied the relation between auditors' perceived business risk and audit fees to determine whether audit firms or their clients bear the expected legal costs of business risk. Using data from the audit working papers of a sample of 422 U.S audit performed in 1989 they find evidence that audit fees are increasing in the engagement partners' assessments of business risk.

Pratt and James (1994) examined whether auditor judgments of litigation risk and their recommendations for the preliminary audit plan and client fees are influenced by certain client characteristics. They used a sample of 243 audit partners and managers of four "Big 6" firms in US. With an experimental design the researchers suggest that auditors rely heavily on their assessments of a client's financial condition to assess litigation risk. Poorer financial condition was associated with higher levels of litigation risk, more audit evidence, and higher audit fees. Their result also weakly support high levels of receivables and inventory, equity market value, and sales growth were associated with high levels of litigation risk. The authors finally suggested that audit fees reflect both the amount of audit evidence collected and an additional premium to cover litigation risks.

Lyon and Maher (2005) investigated the relation between audit fees and business risk for audit clients doing business in developing countries where bribery of top government officials has been an accepted business practice. Using a sample of 82 companies registered with the SEC a cross-sectional audit fee regression model based on prior audit fee research after controlling for cross-sectional differences in client

size, audit complexity, and auditor-client risk sharing. They also expand their model to include control variables that might be correlated with the payment of bribes. Their results indicated that clients who engage in behavior that is viewed by some as misconduct incur higher audit fees than those who do not.

Davis et al., (1993) studied whether providing audit clients with non-audit services result in knowledge spillovers and audit production efficiencies that could produce economic rents for the auditor. Using a sample of 98 clients' 3 years data, their results suggest that, although purchasers of non-audit services pay higher audit fees than non-purchasers, the higher fees are associated with a proportional increase in audit effort, measured in this study as unweighted and weighted audit hours. These findings are inconsistent with one interpretation of prior research: that performing non-audit service for audit clients may provide the auditor with incentives to compromise objectivity.

Palmrose (1986) studied to test whether there is a systematic relationship between audit firm size (in both absolute size and relative market share) and audit fees using 1200 companies (both public and non public) in 39 industries. She used a mail questionnaire with a response rate of 30%. Her results indicate that, there is a statistically significant relationship between auditor size and audit fees based on being a Big-Eight/ non- Big-Eight classification.

Francis and Simon (1987) studied the presence of audit premium to provide further evidence on audit pricing in the small-client segment of the U.S. audit market for publicly-traded companies. They used a final sample of 220 small companies having sales less than \$ 125 million with a response rate of 23%. Audit fees are regressed on a set of explanatory variables that includes the experimental variable audit firm size.

Their result strongly supports the existence of a Big Eight price premium with respect to both second-tier national auditors and local/ regional auditors. They also suggest given the assumption of competition in the small auditee market segment, higher Big Eight prices imply Big Eight product differentiation.

Caneghem, (2010) conducted a study to test whether a well-documented Big fee premium also applies to the Belgian audit market. He used a sample of 4,403(of which 99% were privately held) observations for the year 2007. The researcher used OLS (the traditional audit fee model). In addition to the traditional audit fee model, based on the studies of (Ireland and Lennox, 2002), the author used a two-stage procedure in order to control for potential endogeneity biases (auditor self selection). His result based on the traditional audit fee model is consistent with Big4 auditors charging a fee premium compared to non-Big4 auditors. However, after controlling for the self selection problem the result did not support the Big4 fee premium.

Ireland and Lennox (2002) estimated the premium charged by large audit firms after controlling for the effects of auditor selection on the estimated fee premium using a two-stage model in UK companies. They find the effects of auditor selection on audit fees are statistically and economically significant. In addition, their result shows the premium earned by large audit firms is more than twice as large when selectivity bias is taken into account (53.4% compared to 19.2%). Further their result indicate large auditors attract clients that are of higher than average quality and require less than away audit effort.

Gonthier-Besacier and Schatt (2007) based on audit fees paid in 2002 by 127 non-financial public French firms studied whether specific ~~tr~~aditional” determinants of audit fees, as previously identified in other countries, prove to be relevant in France.

In addition, they analyzed whether the joint audit process (which is specific to the French setting), and especially the presence of one or two Big Four firms, has an influence on the amount and the division of audit fees. In their methodology, in addition to the traditional determinants of audit fees, they also take in to account determinants arising from French joint audit practice like distribution of fees between auditors and the number of Big Four firms involved. Their result shows that size of the audited firm and risk to be significant factors in determining the audit fees in France. Furthermore, their result shows that audit fees become higher when a firm decides to employ the services of only one Big Four firm. They also suggested that there exists an advantage for French companies, employing two of the Big Four firms for their joint audit in terms of audit fees.

Al-Harshani (2008) examined factors influencing the amount of external audit fees using a sample which consists of 49 audit engagements with 2005 fiscal-year ends that were performed by both “Big” and “non-Big” audit firms in Kuwait. He used a cross-sectional audit fee regression model consisting of explanatory variables commonly believed to be key determinants of external audit fees. His results showed that the amount of audit fees in Kuwait is positively related to the audit client size and profitability of the audit client. His results also indicated that external audit fees are inversely related to the client’s liquidity ratio, as a measure of client risk. The results, however, do not provide significant evidence of the expected relation between external audit fees and the number of audit locations visited, the client’s debt-to-equity ratio and the audit firm size.

Garsombke et al., studied whether clients who obtain competitive audit engagement bids have lower audit fees. Using 507 samples, the researchers found that choosing

the lowest of the bids may not result in lower fees, on average, than firms that choose other than the lowest bid.

Beattie and Fearnley (1998) studied factors influencing auditor changes within external auditing environment, which is characterized by increased competition using questionnaire survey of 508 listed UK companies. Their results suggest the expectation of a reduced audit fee was not a top priority when selecting firms to tender.

2.2.2 Empirical studies on bank audit fees and quality

Fields et al., (2004) investigated audit pricing for financial institutions using standard audit fee model for industrial companies by incorporating measures of risk and complexity that are unique and used by bank regulatory agencies. Using a sample of 277 financial institutions in fiscal 2000 they find that audit fees are higher for banks having more transactions accounts, fewer securities as a percentage of total assets, lower levels of efficiency, and higher degrees of credit risk. They also find that audit fees are higher for savings institutions that are more involved in acquisition activity, and for institutions that are required by regulatory agencies to maintain higher levels of risk-adjusted capital. Their model speaks directly that complexities and risks considered important by regulatory agencies are also the drivers of audit fees and hence tend to be priced by audit firms.

Lobo et al., (2010) examined auditor independence in the banking industry by analyzing the relation between fees paid to auditors and the extent of earnings management through loan loss provisions using a sample of 1,740 bank-year observations over the years 2000–2006 in US. They used a two stage regression to decompose the abnormal component of audit fees and abnormal LLP. First they

estimated the normal components of audit fees and loan loss provision controlling for the factors which are identified to affect audit fee and LLP in prior studies in a separate regression model. Then they used the residuals from the audit fee and LLP model as abnormal audit fee and abnormal loan loss provision to see their relationship in a separate regression controlling for other factors which are believed to affect unexpected loan loss provision. Their result indicated for large banks both unexpected total fees and unexpected non-audit fees have no association with either income-increasing or income decreasing abnormal LLP. In contrast to larger firms they report higher auditor fees are associated with higher income-increasing earnings management for small banks. Their result also exhibited a negative association between unexpected non-audit fees and income-decreasing abnormal LLP for small banks. In general, their results confirm greater earnings management by small banks that pay higher abnormal fees to the auditor.

Anandarajan, et al. (2005) studied how LLPs are used in earnings management and capital management in Australia using OLS regression model. They used 441 number of bank-year observations comprised of 79 for listed and 362 for unlisted commercial banks. Their result revealed evidence of earnings management behavior using LLPs by Australian banks, and by listed commercial banks in particular relative to other types of banks. They also find evidence of accentuated earnings management behavior using LLPs in the post-Basel period. Further, their findings indicate that reported financial numbers may not reflect the underlying economic reality of the financial institution

Curcio and Hasan (2008) examined the relationship between loan-loss provisions (LLPs) and earnings management, and the association between LLPs and capital adequacy requirements through a comparison of 14 European Union countries. They

also tested whether LLPs are used as a tool to signal managements' expectations concerning future bank profits to investors and finally they investigate the impact of some cross-country determinants on bank income smoothing, such as bank regulation and bank supervision. For their empirical analysis they used a sample of 907 European banks over the period 1996- 2006

Their result indicated that loan-loss provisions reflect changes in the expected quality of banks' loan portfolio; capital management is an important determinant of loan-loss provisions for EU banks but not for non-EU banks; earnings management is strongly supported for both EU and non-EU banks; non-EU credit institutions do use loan-loss provisions to signal private information to outsiders, whereas EU banks do not; bank loan-loss provisions follow a pro-cyclical trend; and, finally, restrictions on bank activities, official and private supervisory have a different impact on income smoothing practices at EU and non-EU banks, meaning that they reduce incentives to smooth earnings in non-EU banking systems.

2.3. Conclusion and knowledge gap

In general the discussion above on the demand and supply side determinants of audit fees reveals two underlying reasons for the fluctuation on audit fees. On the demand side better quality audit and somehow competition in the audit market determines audit fees. It is widely believed that Big audit firms provide better quality audit services than the smaller ones and hence require higher fee even if the empirical results are not still conclusive.

On the supply side, the determinants of audit fee are directly or indirectly connected to risk. The audit fee depends as to how a particular factor/determinant attributable to the audit client affects the audit risk. Most of the risk drivers factors for the auditor

increase as the audit client size increase. For example as the client size increase the complexity and the proportion of current asset (risky assets like inventory and receivables) is also expected to increase.

Client size, auditor size and risk factors evidenced to be the most important variables in explaining the variations in audit fee in literature. However there are still variations in the factors explaining audit fee across countries. In this regard (Nikkinen and Sahlström 2003; Hay 2006) suggested that cultural sensitive and market specific variables could potentially have a significant impact on audit fees paid.

In spite of the fact that, the determinants discussed so far holds for all companies, the proxies used to measure these factors differ somewhat for banking institution because of the different nature of operation and the environment they operate in. Therefore, risk and complexity proxies that are considered important by regulatory agencies are found to be the major drivers of audit fees for banking institutions.

With regard to auditor independence and audit quality the studies revealed a mixed result. On the one hand it's found that firms that pay abnormally higher audit and non audit fees tend to manage earning. In other words, firms use higher audit and non audit fees as leverage to manage earning by compromising auditor independence. Still some others argue that auditors have market-based institutional incentives to act independently (DeAngelo 1981; Defond et al. 2002). The sacrificed independence costly is to mitigate and they have more reputational capital to maintain. This strand of literature also suggest that negative relationship among audit fees and Non audit fees is due to the knowledge spill over from the provision NAS to audit. This implies the knowledge gained through the provision of NAS can be utilized in the audit and the client would benefit from the knowledge spillover in the form of lower audit fee.

Even though a plenty of studies investigated the determinants of audit fees and the economic bond between auditors and client firms, in different countries especially in the western; there is a lack of empirical evidence from the developing countries context like Ethiopia. Only a limited studies had been conducted in the area from developing countries as far as the researcher knowledge is concerned e.g. Nigeria, Lebanon, South Africa, Jordan. Researches in the area is very useful in giving an insight for both audit firms and company stakeholders as to how audit firms charge audit fees. It can also help regulatory and professional bodies to properly monitor the external audit profession and to maintain trust among the various stakeholders. Therefore; it would be worthwhile to ask what factors the external auditors consider in determining the audit fees for their bank clients in the Ethiopia. Do auditors consider factors considered important by the regulatory agencies? Does the economic bond between the auditor and the client bank, have any impact on the audit quality? This paper aimed to speak directly to such issues using sample of Ethiopian commercial banks.

Chapter Three: Research Design

The previous chapter dealt with review of related literature on the determinants of bank audit fees and audit quality. This chapter outlines and explains the methodology employed to achieve the research objective and test the research hypotheses formulated in the study. It starts by explaining the research objective and hypothesis in the first subsection. The second section provides a brief overview of the research approaches followed with the methodology adopted in the study, which in turn includes population, sampling design and actual data collection tools in the third section. The fourth section discusses about data presentation and analysis techniques used in the study. The fifth section presents the model and variable descriptions for all the three models adopted in the study. The last section, deals with model selection issues in a considerable detail including various tests conducted to select the appropriate model for the study.

3.1. Research Objective and hypotheses

The major objective of this panel study is to investigate the impact of the factors that are believed to influence bank audit fees from prior studies in the determination of audit fees in the audit of commercial banks of Ethiopia. Using different risk, complexity, financial stability measures peculiar to the banking industry and other factors which are found to influence audit fees in prior studies, the study assess factors that external auditors consider in pricing their audit service for Ethiopian commercial bank clients. Specifically, the study assess whether audit fee is influenced by bank size, Liquidity risk, Operating risk, credit risk and capital risk. In addition, the study analyzes auditor independence and audit quality issues by examining the relationship between the extent of earning management through abnormal accruals and abnormal audit fees.

In order to achieve the objective of the study the researcher developed eight hypotheses. The factors that determine audit fee with their theoretical underpinnings are discussed in detail in the second chapter. In this section, the researcher provides a brief theoretical discussion on the relationship of the determinant factors with audit fee and the hypothesis developed for the study.

Bank size: it is generally assumed that as the audit client/Auditee size increases the audit fee that the audit firm charge will also increase. This positive relationship has been justified on the ground that firms with large size require more audit hours to analyze large volume of transactions, subsidiaries, various classes of assets (Simunic 1980; O'Keefe, et al., 1994; Caneghem, 2010; Gonthier-Besacier and Schatt, 2007). Hence the longer the audit hours the higher would be the audit fees. The relationship between client size and audit fee is empirically evidenced across countries and conventionally all the studies found positive relationship (e.g. Simunic 1980; O'Keefe, et al., 1994; Ahmad et al., 2006; Gonthier-Besacier and Schatt, 2007; Naser, et al., 2007; Al-Harshani 2008; Thinggaard and Kiertzner, 2008; Caneghem, 2010; El-Gammal 2012). Bank audit literature demonstrates the same effect of bank size. As Cullen et al. (2012) indicate that the client size by itself (proxied by the natural logarithm of total assets) explains over 70% variances in audit fees. In addition bank size is highly correlated with a series of bank financial risk measures, asset securitization risk measures and auditor attributes suggesting the effect of bank size could be either direct or via its indirect effects on other audit fee determinants(Wui 2011). Based on the above theoretical argument a positive relationship between audit fees and bank size will be expected. Similar to prior studies a natural logarithm of total asset is employed for the fact that the relationship may not be linear.

H1: Bank size has a positive and significant relationship with audit fees.

Audit firms Size: DeAnglo (1981) analytically demonstrated that larger audit firms provide a better quality audit than their smaller counterparts. However, the empirical evidence shows mixed result whether larger audit firms charge a higher audit fee premium for the quality service they provide than the smaller ones. Palmrose (1986) Francis and Simon (1987) found a positive relationship between audit fee and auditor size. In this study a positive relationship between audit fees and the auditor size is expected. The study used the auditor grade given by OFAG to classify auditor's size in to Big Versus non-Big. .

H2: Auditor size has a positive and significant relationship with audit fees.

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 (Ananthanarayanan 2011). 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 has 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 recent period loss and find significant relationships. Others e.g. (Ebrahim 2010) using ROA reported profitability significantly influence audit fee. In this study only ROA is used to measure banks profitability for the fact that the client banks do not report loss during the study period. In this study, a direct relationship between banks profitability (measured through ROA) and audit fees expected.

H3: *Banks profitability has a positive and significant relationship with audit fees.*

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. Transactions accounts arise from the basic banking function of providing a means of payment to consumers and businesses. 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 to monitor. Moreover, large numbers of transactions accounts are usually associated with a significant number of ATM machines and a large inventory of currency and coin, which are also costly to maintain and monitor. They further contended banks with a higher proportion of transactions accounts have higher liquidity risk and greater operational complexity. Therefore, these banks should have higher audit fees. However, Ettredge et al. (2011) argued large numbers of transactions accounts increases operational complexity but not liquidity since the cash balances must be available to serve account customers rather than to pay other creditors. Therefore, it's not clear whether the increased audit fee is associated with liquidity risk or the complexity which arise out of maintaining large numbers of transactions accounts.

As (Fields et al., 2004) noted liquidity risk is decreasing in the proportion of total assets held as securities, banks holding more securities should have lower audit fees. They also suggested, fees may also be negatively related to investment securities because the relative transparency of the asset portfolio should make the associated audit work less complicated. Prior researchers used liquidity proxies like demand to total deposits and investment in securities (Fields et al 2004, Ettredge et al 2011, and Lobo et al 2010). Schneider and Tran (2013) 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 proxied by demand deposits to total deposits and liquid assets to total assets¹. Based on the above arguments liquidity risk is expected to have a positive relationship with audit fees in this study.

H4. Liquidity risk has positive and significant relationship with audit fees.

Credit risk: Credit risk primarily involves the quality of the bank's assets and the probabilities of default in its loan portfolio, though credit risk may also exist in the securities portfolio. Boo and Sharma (2008) contended bank auditors need to review the credit quality of borrowers and assess the effectiveness of the bank's credit risk management practices. Credit risk is measured by the quality of banks asset and loan portfolio composition. Nonperforming loans and loan charge-off rates² are the primary indicators of the bank's asset quality. Non-performing loans implies greater risk as the likelihood of default is higher compared to performing loans. Increasing levels of non-performing loans are expected to demand greater audit effort.

In addition to the Asset quality measures, the loan composition also presents different risk exposure because some types of loans are more risky than the others. In this regard, as Fields et al. (2004) suggested, in contrast to non-commercial loans, commercial loans are complex transactions and frequently involve significant collateralization. Furthermore, the audit and evaluation of a commercial loan portfolio is difficult because the portfolio lacks transparency, thereby increasing measuring and monitoring costs. Even though, residential and mortgage loans have a very lower

¹ According to the NBE establishment proclamation (No. 591, pp. 4168) liquid assets of banks include cash on hand, deposit in other banks, and short term government securities that are acceptable by the NBE as collateral (for instance, Treasury bills)

² For banks which do not indicate Loan charge offs in the statement it, was calculated as follows: charge offs = (beginning loan loss reserve+ Loans recoveries from previously charged off+ Loan Loss Provision for the year)- balance of Loan Loss Reserve at the end of the year or CHOFF= (BLLR + LOANS RECOVERD + LLP) -ENDLLR

default rate the growth of securitization in such loans increase the associated audit work and audit fees increase accordingly. Here, in Ethiopian context loan securitization is not practical and therefore mortgage and real-estate loans may have lower default rate in contrast to Commercial loans. In this study the definition for commercial loans includes trades (both domestic and international), service and industrial loans. Many studies found positive association between audit fees and bank credit risks (Fields et al. 2004; Ettredge et al. 2011; Lobo et al; 2010; Doogar et al. 2012; Cullen et al. 2012; Schneider and Tran 2013). Likewise, in this study a positive relationship between audit fee and the credit risk proxies (Non-performing loan rates, net loan charge offs and commercial loans) is expected.

H5: Banks Credit risk has positive and significant relationship with audit fees.

Operating risk: Operating risk refers to the possibility of high operating costs depleting the capital account of the bank. Banks with high operating risk will find it difficult or impossible to earn acceptable profit without taking unacceptable risk. Higher ratios lead to reduced profitability, making it more difficult for banks to increase equity (retained earnings) and regulatory capital. High (inverse) efficiency ratios often reflect non-interest expenses arising from large numbers of transactions accounts and geographically dispersed branch systems (Fields et al. 2004; Ettredge et al. 2011). Wui (2011) suggested Management deficiency can attract fraud and errors in management and operations leading to higher audit risk. He further, contended, earnings ratios are one of the important signals in going concern consideration; unfavorable earnings performance are also regarded as an incentive to manipulated reporting. Therefore, based on the above arguments audit fees are expected to have a positive relationship with operating risk. Similar to prior studies in bank audit literature, total operating expense to total revenue is used as a proxy for efficiency.

H6: Banks operating risk have a positive and significant relationship with audit fees.

Capital risk: Capital risk refers to the potential that shrinkage in the value of assets will deplete the bank's equity account. Bank capital serves to absorb losses, promote public confidence; helps to restrict excessive asset growth and provide protection to depositors (Wui 2011). Theoretically, audit fees should be increasing in the client's level of capital risk. However, as (Fields et al. 2004; Doogar et al. 2012; Schneider and Tran 2013) suggested the relationship between audit fees and the risk-adjusted capital ratio could conceivably be positive or negative. Practically speaking, riskier banks are often required by regulators to maintain larger regulatory capital cushions. In this sense, higher capital ratios might imply worse risk status and higher specifically-set minimum capital requirements. Accordingly, in such situations a positive relationship would be expected between the risk-adjusted capital ratio and audit fees. Further, Doogar et al (2009) suggested that a higher capital ratio may often counter-intuitively indicate bank riskiness since it reduces return on equity, a key performance metric. Wui (2011) also contended that the evaluation of capital adequacy should also consider other aspects of financial risks, including management capability, asset quality and composition, Earnings, growth prospect and contingent liabilities. For example, problematic asset quality implies potential expected losses and a weakened capital position at a future point of time a bank's earnings performance may have impact on the present and expected capitalization level; and serious contingent liabilities may lead to capital depletion. Prior researchers employed different measures for capital adequacy i.e. total risk-adjusted capital ratio and intangible assets (Fields et al., 2004; Ettredge et al. 2011; Schneider and Tran 2013) Tier 1 risk-based capital ratio (Doogar et al., 2009), risk-adjusted capital ratio (Cullen et al., 2012). In this study a negative relationship between audit fee and capital risk is

expected. As a measure of capital adequacy, risk-adjusted capital ratio³ is employed in this study.

H7: Banks capital risk has positive and significant relationship with audit fees.

Audit quality: The existence of (excess/positive) client-specific quasi-rents creates an incentive for the auditor to compromise independence with respect to a specific client (DeAngelo 1981; DeFond et al. 2002). Choi et al., (2010) conjectured when the auditor receives abnormally high audit fees from a client (i.e., abnormal audit fees are Positive), the auditor possibly allow the client to engage in opportunistic earnings management. He further reasoned that for clients with positive abnormal fees, the benefits to the auditor from acquiescing to client pressure for opportunistic earnings management can outweigh the associated costs (e.g., increased litigation risk, loss of reputation). For those firm's earnings increase has been gained through doubtful accounting practices are likely to pay higher audit fee to persuade its auditors to certify for those earnings and give it a better audit opinion than the facts merit (Xie et al. 2010). As a possible explanation for the relationship between audit fees and earning management in banks, Lobo et al (2010) suggested firms that are more difficult to audit have higher incentives to manage earnings, and auditors are likely to charge higher audit fees to firms that are more difficult to audit, this will be expressed in a positive relationship between audit fees and abnormal LLP. Therefore in this study a positive relationship between audit fees (abnormal) and earning management (measured through abnormal LLP)

H8: Banks abnormal accruals has positive and significant relationship with abnormal high audit fees

³ In order to calculate risk adjusted capital adequacy ratio, this study used the rates provided by NBE to for various classes of banks assets.

3.2. Research approaches

Research approach is the general framework for the study that links, knowledge claims, strategies of enquiry and specific methods. The research approach implicitly reflects the researcher attitude as to how knowledge is constructed and also commands what method to be employed in the study. According to (Creswell 2009), Quantitative, qualitative and mixed methods based their assumption towards knowledge creation on post-positivism, social constructivism and pragmatic philosophical grounds respectively.

Quantitative research: this approach is based upon an empirical cycle that has a deductive nature. The researcher often uses an established theory to develop the hypothesis to be tested. Jonker and Pennink (2010) contended that the essence of quantitative research is to use a ‘theory’ to frame and thus understand the problem at hand. Quantitative purists believe time and context free generalizations are desirable and possible, and real causes of social scientific outcomes can be determined reliably and validly (Johnson and Onwuegbuzie 2004). It is grounded in the basic attitude that knowledge about reality can also be obtained ‘through the eyes of the researcher’. It is he who elaborates theory based on findings. In order to make this happen, theory is most often translated into a conceptual model and elaborated predominantly by means of hypotheses. For the researcher conducting quantitative research implies carefully operationalising a theory and subsequently measuring it by means of variables and questions.

Qualitative research: is “an inquiry process of understanding” where the researcher develops a “complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting” (Creswell, 2002, p. 15). In this

approach, the researcher makes knowledge claims based on the constructivist (Guba & Lincoln, 1982) or advocacy/participatory (Mertens, 2003,) perspectives. In qualitative research, data is collected from those immersed in everyday life of the setting in which the study is framed. Data analysis is based on the values that these participants perceive for their world. Ultimately, it produces an understanding of the problem based on multiple contextual factors” (Miller, 2000)

Mixed methods research: Johnson, R. B and Onwuegbuzie, A. J. (2004, pp 17) defined mixed methods research as *the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study*. Philosophically, mixed research makes use of the pragmatic method and system of philosophy. Its logic of inquiry includes the use of induction (or discovery of patterns), deduction (testing of theories and hypotheses), and abduction (uncovering and relying on the best of a set of explanations for understanding one’s results). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially that best suit to understand the problem Creswell (2003)

3.3. Research approach adopted

The major objective of this panel study is to assess the audit fee determinant factors in Ethiopian commercial banks based on factors which are found to significantly influence audit fees in prior studies. The research problem tend to be explanatory which seeks to explain the relationship between audit fees and bank level factors as well as auditor attributes. Therefore, quantitative research design is appealing for this study to achieve the objectives of the study and to test the hypothesis. Creswell (2003) indicated different methods associated with quantitative methods mainly

focusing on survey and experimental designs. In this study the researcher used survey research method.

3.3.1. Survey design

A survey design provides a numeric description of trends, attitudes, or opinions of a population by studying a sample of that population so that inferences can be made about the population (Creswell 2003). Surveys include cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection, with the intent of generalizing from a sample to a population. Fowler (1984, p. 12) noted that the strengths of survey methods that result in their wider use included the value of statistical sampling, consistent measurement, and the ability to obtain information not systematically available elsewhere or in the form needed for analysis. Survey design is used to make statistical inferences for bank audit fees determinants and the economic bond between auditors and client banks.

The purpose of quantitative studies is for the researcher to project his or her findings onto the larger population through an objective process. Data collected, often through surveys administered to a sample or subset of the entire population, allow the researcher to generalize or make inferences. Results are interpreted to determine the probability that the conclusions found among the sample can be replicated within the larger population. Conclusions are derived from data collected and measures of statistical analysis (Creswell 2002; Thorne and Giesen 2002). Therefore, the investigator is capable of studying a phenomenon without influencing it or being influenced by it; —inquiry takes place as through a one way mirror” (Guba and Lincoln 1994: 110). The goal is to measure and analyze causal relationships between variables within a value-free framework (Denzin and Lincoln 1994).

3.3.2. Sampling design

A sample is a portion of the population that inferences are to be made about the population. The population for this study consists of all commercial banks operating in Ethiopia, Out of which 2 of them are state owned while the remaining banks are privately owned. The sample frame for the study was determined based on the availability of each bank data from the year (2004 -2012) including the one year ahead data for some variables used in the study. There are only eight commercial banks operating in the country during the whole study period. Since the number of banks in the sample frame is relatively small and manageable, all the banks were included in the sample. According to Brooks (2008, p 105), while there is no definitive answer for an appropriate sample size for model specification, it should be noted that most testing procedures in econometrics rely on asymptotic theory. This theory dictates that as the sample size approaches to the population, the results from the sample estimates are more appropriate for generalizing to the general population. Thus in this case the sample size is equal to the population in the sample frame which enabled to make appropriate generalization to the overall population.

The sample for the study is composed of 6 private and 2 state owned banks. Namely, Awash international Bank, Dashen Bank, Abysinia bank, Nib international bank, Wegagen bank, United bank, commercial bank of Ethiopia and Construction and business bank are included in the sample.

In this study only secondary data is utilized. The structured review of documents enables this study to critically investigate bank audit fees determinants and audit quality than the primary data sources would allow given the confidentiality nature of the data, biased responses among the respondents and response rate considerations. A nine year audited annual report data was obtained from each of the eight banks (72

firm-year observations). In addition to financial statement data for each bank, data was also obtained from NBE for items which are not reported in the bank's annual reports. One year ahead data was also used for some variables in which lagged values are required in the regression. Information regarding the auditor Grade was obtained from OFAG.

3.4. Data presentation and analysis

In this study various statistical analysis were employed to analyze the data and test the research hypothesis. First, descriptive statistics is used to highlight the nature of the data and describe the variables used in the study in terms of trends and variation among the cross-section. Second, correlation analysis is also conducted to see the relationship among the dependent and independent variables. This would help to get an initial picture as to the nature of the relationship among the variables before proceeding to regression analysis. Finally the panel least square regression analysis is used to determine the significant relationships between bank audit fees and its various determinants and to test the hypothesis there on. Similar procedures were also used to test the hypothesis related to audit quality i.e. the relationship between earning management (proxied by ALLP) and abnormal fees. Various tests were also conducted to determine the appropriate regression model and to test the validity of its assumptions. In order to avoid outlier problems, extreme maximum and minimum observations were rested 98% and 2% percentiles respectively.

3.5. Model and Variable Description

In order to test the research hypothesis discussed in this chapter, three testable models are developed. The first model is used to estimate audit fee. The other two models are employed to test the hypothesis developed for auditor independence and audit quality.

This section is organized in the following order; first the study discusses the conceptual model used to investigate the link between earning management and economic bond. Then, each of the three empirical models are discussed in a considerable detail accordingly.

In order to examine the auditor independence, the study examines the two theoretical constructs i.e. the economic bonds to the audit client and earnings management by the client. The study identifies proxies to measure the economic bond and earnings management because these two constructs are unobservable. Kinney and Libby (2002) cited in Choi et al. (2010) reason that the economic bond is likely to strengthen as unexpected non-audit and audit fees increase because the abnormal rents earned by the auditor increase. This study used abnormal fees as measure of the economic bond and the abnormal component of a bank's LLP as the measure of earnings management. As (Lobo et al 2010) suggested banking firms provide a setting with a stronger link between earning management and abnormal loan loss provision than that characterizing prior research. They also pointed that using an industry-specific measure of earnings management enables a better separation between abnormal and normal accruals. The study controls for several bank characteristics that can also affect the normal component of LLP. Finally, the study examine the relation between the fee measures and abnormal LLP to draw inferences about the unobserved link i.e. economic bond and earning management

In order to deal with the audit quality and auditor independence issues this study used a two stage procedure. First, the study estimates the normal component of LLP and audit fees. Then the residuals from the respective models are used in the audit quality model to see the link between the abnormal component of audit fees from the audit fee model and the abnormal component of LLP (proxy for earning management) from

LLP model. Therefore, this procedure allows the study to investigate how audit fee (abnormal audit fee) react to the banks level of earning management.

3.5.1. Audit fee model

In this model audit fee is regressed by various independent variables peculiar to the banking industry and other factors that are usually found to influence the variation in audit fees in industrial companies as well. The audit fee model used in this paper was initially developed by (Fields et al. 2004) and extended by others (Ettredge et al 2011, Lobo et al 2010 Schneider and Tran 2013) in bank audit fee studies. This study used (Fields et al. 2004) variables with some modifications to match the country context and the panel nature of the data.

$$\text{LOGFEE}_{it} = \alpha_i + \beta_1 \text{LOGASSET}_{it} + \beta_2 \text{LQ}_{it} + \beta_3 \text{TRANSACT}_{it} + \beta_4 \text{EFFL}_{it} + \beta_5 \text{ROA}_{it} + \beta_6 \text{LGR}_{it} + \beta_7 \text{NPLR}_{it} + \beta_8 \text{CHOFFR}_{it} + \beta_9 \text{CAR}_{it} + \beta_{10} \text{COMMLN}_{it} + \beta_{11} \text{BIG}_{it} + \hat{\epsilon} \dots \text{eq.1}$$

Where:

LOGFEE- is the dependent variable in natural logarithm of the audit fee;

LOGASST- is the natural logarithm of total assets;

LQ. liquid asset divided by total assets of banks

TRANSACCT: Demand deposits divided by total deposits;

EFFICIENCY: total operating expenses (both interest and non-interest expense) divided by total revenues (measured as net interest income plus non-interest income);

ROA: banks net income divided by average assets;

LGR: banks loan growth rate;

NPLR: non-performing loans divided by total loans;

CHGOFF: net loan charge-offs divided by loan loss allowance;

CAR: risk-adjusted capital adequacy ratio;

COMMLN: banks commercial loans

BIG: dummy variable 1 if the bank is audited by Grade A auditor, 0 otherwise;

i and t represent individual cross-sectional unit and time respectively;

$\hat{\epsilon}$: error term.

3.5.2. Estimation of Abnormal Loan Loss Provisions

In this section the study briefly describe the approach used to examine the link between the abnormal audit fees and abnormal loan loss provision. This requires the decomposition of the discretionary and nondiscretionary component of LLP. Following the works of (Beatty et al 2002; Lobo et al 2010; Obsa and Tilahun 2012) the study used a two stage procedure to disentangle the two components of LLP.

First, the normal or nondiscretionary component of LLP is estimated by regressing LLP on beginning loan loss allowance, beginning non-performing loans, change in non-performing loans, net loan charge-offs, change in total loans outstanding⁴. Year controls are also included to control for the period effect for the fact that the various directives issued by NBE in different periods during the study period may affect the amount of lending and hence the Loan loss provision. Further the variations in interest rate and inflation rate over the study period are also likely to affect the extent of loan loss provision. Specifically, the researcher estimated the following model:

⁴ Following (Beatty et al. 2002 and Lobo et al. 2010) the variables used in the in the estimation of ABLLP are scaled by beginning total assets.

$$LLP = \alpha + \beta_1 BEGLLA + \beta_2 BEGNPL + \beta_3 CHNPL + \beta_4 CHOFF + \beta_5 CHLOANS + \beta_6 LOANS + \beta_7 PRIVATE + YEARCONTROLS + \hat{\epsilon}$$

Where:

LLP: provision for loan losses;

BEGLLA: beginning loan loss allowance;

BEGNPL: beginning non-performing loans;

CHNPL: change in non-performing loans;

CHOFF: net loan charge-offs;

CHLOAN: change in total loans outstanding;

LOANS: total loans outstanding;

PRIVATE: dummy variable that takes 1, if the bank is private bank, 0 otherwise;

YEARCONTROLS

$\hat{\epsilon}$: error term.

The explanatory variables used in this model are used by prior researchers to estimate the normal component of LLP for example (Beatty et al. 2002; Lobo et al. 2010; Obsa and Tilahun 2012). The fitted values from this model are considered as normal and the residuals are taken as the abnormal component of LLP for further analysis in the third model.

3.5.3. Audit quality model

This model is used to examine the link between the extent of earning management (through ABLLP) and the abnormal audit fees controlling for other

factors which are believed to affect the level of earning management in prior studies (Choi et al. 2010; Lobo 2011). The study controls for the effect of bank size, leverage, current performance, change in revenue, past level of accruals and auditor type. Previous research shows that large firms tend to have more stable and predictable operations and hence report a lower level of discretionary accruals than small firms. Therefore, LOGASSET is included in the model to control for the size effect. Discretionary accruals are positively correlated with firm performance, therefore the study include EBTP and change in total revenue to account for this effect. Further, the study also control for the reversal of accruals over time by including lagged LLP, and for capital management incentives by including capital to total asset ratio.

$$ABL\text{LLP} = \alpha + \beta_1 \text{LOGFEE} + \beta_2 \text{ABFEE} + \beta_3 \text{POSABFEE} + \beta_4 \text{POSABFEE} * \text{ABFEE} + \beta_5 \text{LOGASSET} + \beta_6 \text{CATA} + \beta_7 \text{EBTP} + \beta_8 \text{CHREV} + \beta_9 \text{PLLP} + \beta_{10} \text{BIG} + \epsilon \dots \dots \dots \text{eq3}$$

Where:

ABL\text{LLP}: dependent variable abnormal loan loss provision taken from the LLP model residuals;

ABFEE: abnormal fee, the residuals from the audit fee model;

POSABFEE: positive abnormal audit fees i.e. abnormal fee taking positive sines from the audit fee model residuals;

POSABFEE*ABFEEF: interaction term for positive abnormal audit fees and abnormal audit fees

LOGASSET: Natural logarithm of total assets

CATA: banks capital total asset at the beginning of the year

EBTP: Earning before taxes and loan loss provision

CHREV: change in total revenue of banks

PLLP: lagged Loan Loss provision divided by beginning total asset.

BIG: dummy variable taking 1 if the bank is audited by Grade A auditor

$\hat{\epsilon}$: error term

Table 3.1 Summary of Model Variables and expected sign

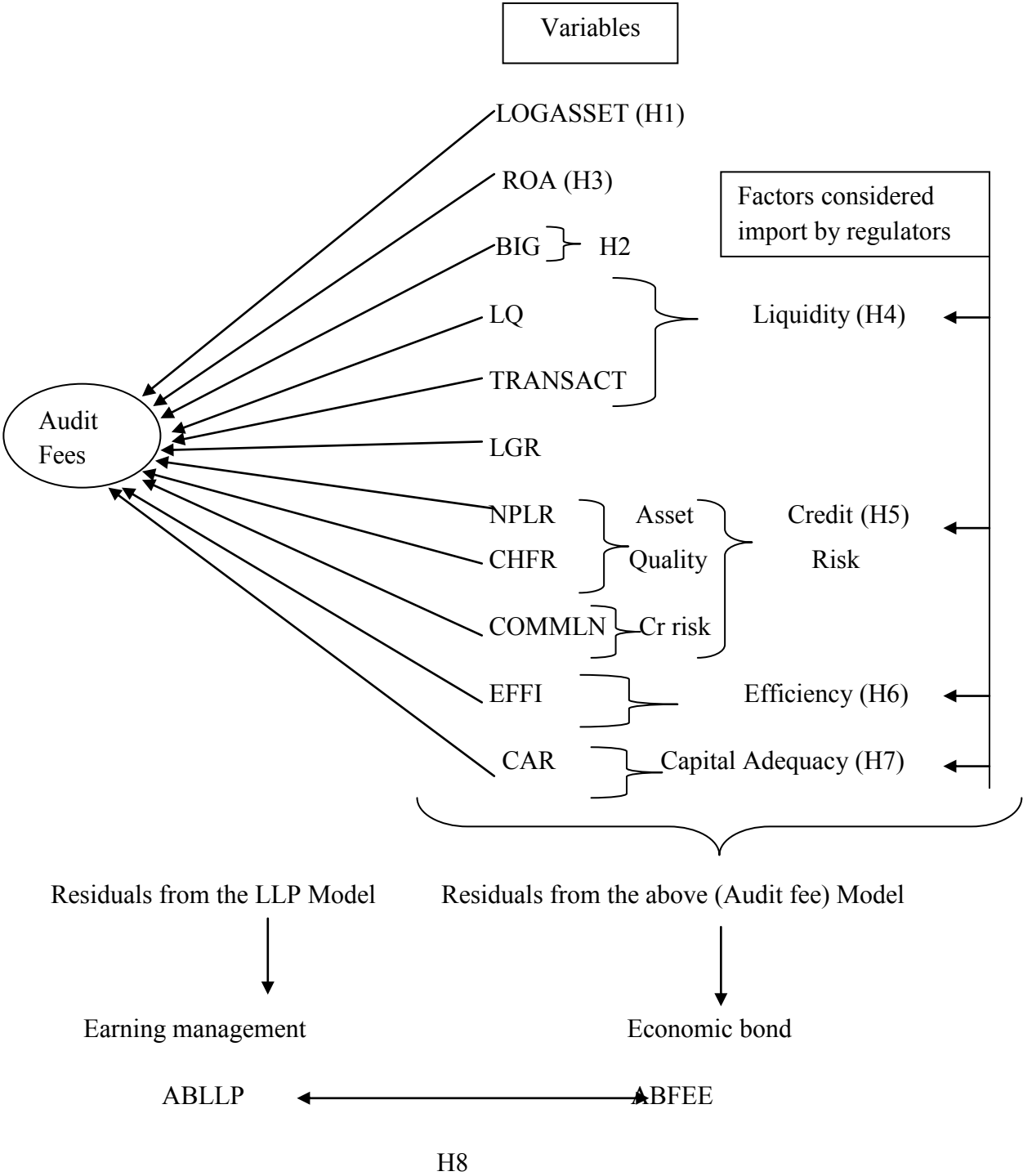
A. Fee model	Variable Definition	Expected sign
Audit Fee(Dependent)	Banks annual Audit Fee	
LOGASSET	Natural logarithm of total asset	Positive
LQ	Liquid asset/ total asset	Negative
TRANSACT	Demand deposit to total deposit	Positive
EFFI	Total operating expense/ total revenue	Negative
ROA	Return on Asset(calculated on average Assets)	Positive
LGR	Loan growth	Positive
NPLR	Non-performing loan Rate	Positive
CHOFR	Charge-off rate	Positive
CAR	Capital adequacy ratio	Negative
COMMLN	Banks commercial loan	Positive/ Negative
BIG	Dummy Variable taking 1 for grade “A” Auditor	Positive
LLP Model		
LLP(Dependent)	Loan Loss Provision (Income Statement account)	
BLLA	Beginning Loan Loss Allowance (Balance Sheet account)	Negative
CHNPL	Change in Non-performing loan	Positive
CHOFF	Charge-off rate	Positive
LOAN	Total Loans outstanding	Positive
BNPL	Beginning Non-performing loan	Positive
CHLOAN	Change in Total Loans outstanding	Positive/Negative
ABLLP Model		
ABLLP(Dependent)	Absolute Value of Abnormal Loan Loss Provision (residuals from LLP model)	
LOGFEE	Natural logarithm of audit fees	Positive
ABFEE	Abnormal fee from Audit Fee model	Positive
POSABFEE	Positive Abnormal fee	Positive
POSABFEE*ABFEE	Interaction term for Positive Abnormal fee and Abnormal fee	Positive
LOG(ASSET)	Natural logarithm of total asset	Negative
CATA	Banks capital to total asset ratio	Positive
EBTP	Earnings before tax and provision	Positive
CHREV	Change in banks total revenue of banks	Positive
PLLP	lagged Loan Loss Provision	Negative
BIG	Dummy Variable taking 1 for grade A Auditor	Negative

Table 3.2 The link between hypothesis and variables

H1: Banks size	LOGASSET and LGR
H2: Auditor size	BIG
H3: Banks profitability	ROA
H4. Banks liquidity	LQ and TRANSACT,
H5. Banks credit RISK	NPLR, CHFR and COMMLN
H6: Banks management efficiency	EFFI
H7: Banks Capital adequacy	CAR
H8:Banks earning management and independence	ABLPP

All the variables are computed from the financial statements and financial figures accessed from NBE. The following graph 3.1 further shows how the research hypothesis linked to the measurement variables;

Figure 3.1. The link between research hypothesis and variables



3.6. Model Selection

In terms of data type's employed, empirical researchers usually used three type's data: time series, cross-sectional and pooled data that combines both time series and cross-sectional observations. A typical panel or pooled data are repeated observations on the same cross section, typically of individuals or firms observed for several time periods and have attracted attention for its potential to improve precision in estimation (Kaplan and Henderson 2000).

To conduct regression analysis with panel data three main approaches are available: pooled regression, the fixed effects model, and the random effects model. The pooled model is the most restrictive case that has a single common intercept (α) and constant coefficients estimates based on variation between firms and over time. The Fixed-effects model allows each cross-sectional unit to have a different intercept term (α_i) though all slopes are the same. The α_i are random variables that capture unobserved heterogeneity (cross-sectional specific effects). The Random effect model assumes the unobserved heterogeneity (α_i) are random that are distributed independently of the regressors. In the latter two approaches, the unobserved differences are always regarded as random variables. The difference lies on the structure of the correlations between the observed variables and the unobserved variables. In fixed effects model, the unobserved variables are allowed to have any correlations whatever with the observed variables (which turns out to be equivalent to treating the unobserved variables as fixed parameters). In a random effects model, the unobserved variables are assumed to be uncorrelated with all the observed variables.

The improvements in estimation attained with the use of panel data are several. In general terms, the availability of repeated measures on a single sample unit allows construction of models that are more sophisticated than similar time-series, cross-

sectional, and pooled models. Furthermore, where a dynamic setting is anticipated, it is more informative to understand how a particular firm responds to changed circumstances rather than how one firm's response differs from that of other firms.

As to specific improvements, panel data analysis can address two persistent econometric problems: omitted *variables bias* and *heterogeneity bias*. First, if an excluded explanatory variable is correlated with an explanatory variable included in the model, application of least squares regression methods to cross-sectional or pooled data provides estimates that are biased and inconsistent. The resulting estimate reflects the effects of both the included variable and the excluded correlated variable. With panel data analysis (specifically, fixed effects), because estimation focuses on within-firm variation, omitted variables bias is avoided, provided it is reasonable to assume that the omitted variable is constant over the time frame of study. Consider the following panel data model in which z represents the correlated omitted variable.

$$Y_{it} = \alpha_i + \beta'x_{it} + \gamma'z_{it} + \varepsilon_{it}$$

Estimation approach:

$$Y_{it} - \bar{Y}_i = (\alpha_i - \bar{\alpha}_i) + \beta'(x_{it} - \bar{x}_i) + \gamma'(z_{it} - \bar{z}_i) + \varepsilon_{it}$$

Where $Z_{it} = \bar{Z}_i$:

$$Y_{it} - \bar{Y}_i = \beta'(x_{it} - \bar{x}_i) + (\varepsilon_{it} - \bar{\varepsilon}_i)$$

Where: Y_{it} is the dependent variable at time t for each i , x_{it} is a vector of explanatory variables, $i = \text{individual cross-section } (1..N)$ and $t = \text{time } (1..T)$, Z_i represent a vector of covariates that vary across units but not over time; ε_{it} = the error term that varies over time; $\bar{Y}_i$, $\bar{x}_i$, $\bar{z}_i$, $\bar{\alpha}_i$ and $\bar{\varepsilon}_i$ with over bar represent time average values for each i .

In estimating such fixed effect models, note that the Z_i s (time invariant factors) drop out of the equation because they do not vary over time. Importantly, not only do all the Z_i s observed drop out, but in fact any Z_i that we could ever imagine, whether

observable or unobservable, drops out too. In this study, for example whether the bank/ audit firm is state owned or private can be observed, but since fixed effect models rule out all time invariant factors from the model such factors will be excluded. Similarly, other unobservable bank attributes like the strength of board of directors, the strength of internal control, client bank auditors experience, audit hours worked may potentially affect audit fee determination that are not included in the model will be excluded in the fixed effect estimation.

The second specific econometric problem that panel data can address is *heterogeneity bias*. By including only a single intercept term α , cross-sectional and pooled models implicitly assume that behavior is similar across sample firms. Where this assumption does not hold, cross-sectional and pooled regressions yield parameter estimates that are unreliable because they are adversely affected by heterogeneity bias. Because it allows the intercept to vary across firms (includes α_i for each firm), panel data analysis is can be used to capture heterogeneity. For example, in panel fixed effect models fixed effects formulation implies that differences across groups can be captured in differences in the constant term. Each α_i is treated as an unknown parameter to be estimated.

In this study the estimation starts with pooled OLS, then tests for the validity of its assumption is conducted. This study used the audit fee model developed for banks by (fields et al, 2004) is used with slight modification to some of metrics and panel nature of the data.

$$\text{LOGFEE} = \alpha + \beta_1 \text{LOGASSET} + \beta_2 \text{LQ} + \beta_3 \text{TRANSACT} + \beta_4 \text{EFFI} + \beta_5 \text{ROA} + \beta_6 \text{LGR} + \beta_7 \text{NPLR} + \beta_8 \text{CHOFFR} + \beta_9 \text{CAR} + \beta_{10} \text{COMMLN} + \beta_{11} \text{BIG} + \hat{\epsilon} \dots \dots \dots \text{eq.1}$$

Due to the panel nature of the data employed in this study, it is necessary to test whether the data can be pulled together and cross-sectional/ pooled regression could

be applied. In other words, one needs to make sure that the cross-sectional units are homogeneous. Ignoring heterogeneity and applying a simple cross sectional model like above would result in biased and inconsistent estimate. In order to test whether the data can be pooled together and OLS is suitable for the data, coefficient equality test were conducted by introducing dummy variables representing each cross-section with the following pooled OLS:

$$\text{LOGFEE} = \alpha + \beta_1 \text{LOGASSET} + \beta_2 \text{LQ} + \beta_3 \text{TRANSACT} + \beta_4 \text{EFFI} + \beta_5 \text{ROA} + \beta_6 \text{LGR} + \beta_7 \text{NPLR} + \beta_8 \text{CHOFFR} + \beta_9 \text{CAR} + \beta_{10} \text{COMMLN} + \beta_{11} \text{BIG} + \beta_{12} \text{DMAIB} + \beta_{13} \text{DMDB} + \beta_{14} \text{DMNIB} + \beta_{15} \text{DMUB} + \beta_{16} \text{DMWB} + \beta_{17} \text{DMBOA} + \beta_{18} \text{DMCBE} + \beta_{19} \text{DMCBB} + \epsilon \dots \text{eq.2}$$

Table 4.7 provides the Wald test static and the probability for the joint hypothesis that the coefficients (slope intercept) for dummy variables representing each cross section are equal i.e. $H_0: \beta_{12} = \beta_{13} = \beta_{14} = \beta_{15} = \beta_{16} = \beta_{17} = \beta_{18} = \beta_{19}$.

Table 3.3. Coefficient equality test for audit fee model

Wald Test:

Test Statistic	Value	df	Probability
F-statistic	4.505532	(7, 53)	0.0005
Chi-square	31.53872	7	0.0000

As shown in the above Wald test table, the p-values associated with the test static are significant at 1% level and the null hypothesis that the coefficients are equal should be rejected, indicating a significant heterogeneity among the sampled banks. This test demonstrated the presence of significant heterogeneity among sampled banks yearly annual audit fees. This may be due to unobservable bank-specific factors

aforementioned above and other factors. Therefore, pooled OLS cannot be a viable option for this study for the fact that the underling heterogeneity among the cross sections may result in biased estimators in the form of omitted variable biases. Greene (2010) suggested ignoring the heterogeneity when the fixed effects model is appropriate renders the least squares estimator inconsistent and biased. The application of OLS with the presence of unobserved heterogeneity is likely to result in highly misleading estimates because the explanatory variables may be correlated with the error term and by this the central assumption of regression is circumvented (Brüderl 2005).

Once it is tested that pooled OLS is inconsistent for this study because of the underling cross sectional heterogeneity panel fixed effect is usually recommended (Greene 2010). Therefore, the following panel fixed effect model is estimated:

$$\text{LOGFEE}_{it} = \alpha_i + \beta_1 \text{LOGASSET}_{it} + \beta_2 \text{LQ}_{it} + \beta_3 \text{TRANSACT}_{it} + \beta_4 \text{EFFI}_{it} + \beta_5 \text{ROA}_{it} + \beta_6 \text{LGR}_{it} + \beta_7 \text{NPLR}_{it} + \beta_8 \text{CHOFFR}_{it} + \beta_9 \text{CAR}_{it} + \beta_{10} \text{COMMLN}_{it} + \beta_{11} \text{BIG}_{it} + \hat{\epsilon}$$

.....eq. 2

In order to determine which Fixed effect model i.e. cross-section fixed or period fixed effect or both fit the data well, redundant fixed effect tests were conducted. Table 4.8 below shows the test statistic and the p-values for the joint hypothesis, period fixed effect =0, cross-section fixed effect= 0 and both period and cross-section fixed effects =0.

Table 3.4. Redundant Fixed Effects Tests for the audit fee model

Redundant Fixed Effects Tests

Test cross-section and period fixed effects

Effects Test	Statistic	d.f.	Prob.
--------------	-----------	------	-------

Cross-section F	3.984051	(7,45)	0.0018
Cross-section Chi-square	34.723182	7	0.0000
Period F	2.182313	(8,45)	0.0470
Period Chi-square	23.604473	8	0.0027
Cross-Section/Period F	3.641713	(15,45)	0.0004
Cross-Section/Period Chi-square	57.222552	15	0.0000

The null hypothesis that cross-section fixed effects and period fixed effects (not jointly) are zero is rejected at 1% and 5% significance level respectively (see the full test in the appendix). The final two rows in the above table provide evidence that both cross-section fixed effects and period fixed effects (jointly) are significantly different from zero at 1% level and leads to reject the null hypothesis that both (cross-section and period effects) are zero. In general, the above test provide a strong evidence that both cross-section and period fixed effects significantly influence the determination of audit fees in the sampled banks and hence needs to be controlled.

With regard to whether the panel fixed effect or random effect model is necessary for the data is not considered for the following reasons. First, random effect models require a purely random sampling technique. Second, the parameters estimated should be less than the number of cross-sections included.

Various tests are also conducted to make sure the regression results are consistent with central assumptions of the regression for all the three models. For the assumption that the mean of the error terms should be zero, normality test is conducted. For all the three models the p-values are in excess of 0.05 (0.8867, 0.0693 and 0.0687) for audit fee, LLP and audit quality model residuals leading to fail to reject the null hypothesis that the residuals are normally distributed (see Appendix)

For the assumption that, the covariance between the error term is zero ($\text{Cov}(u_i, u_j) = 0$) the study conducted various tests. According to Brooks (2008) Durbin-Watson stat (DW- test) statistic near 2 suggest little evidence for auto-correlations and the null hypothesis no auto- correlations would not be rejected. The DW- test static for the audit fee model is 1.634831, which is near 2 indicates autocorrelation is not a problem as such. Further, since the DW-stat do not provide test statistic which enables a hypothesis test, in this study the residuals are regressed by its first and second lags (see appendix). In both regressions, the p-values associated with the test statistic are not significant at conventional level leading to fail to reject the null hypothesis that states there are no serial correlations between the error terms.

For the later two models i.e.(LLP and audit quality) the DW-stat appears 1.602220 and 2.112505 suggesting little evidence of auto-correlation. In addition, Breusch-Godfrey tests were conducted for both models. The test result (see appendix) for two models indicates, both versions of the test (F -version and χ^2 version) suggest that the null hypothesis of no autocorrelation should not be rejected.

With regard to the assumption of homoscedasticity for the audit fee model the standard error estimates are computed based on robust standard error consistent for heteroskedasticity and serial correlation. For the later two models heteroskedasticity tests were conducted (see appendix). The test result indicates both the Breusch-Godfrey and White tests fail to reject the null hypothesis of homoscedasticity for the Loan Loss Provision and Audit Quality model respectively.

Chapter Four: Data Analysis and Presentation

In the preceding chapters, the review of relevant literature helped this study to understand the problem and design an appropriate research approach to deal with. The previous chapter also discussed the research design employed to achieve the objectives of the study and to test the research hypothesis there on. In this chapter, the study analyzes the collected data using various statistical tools and presents the results and discussion accordingly. This chapter is organized in two sections. The first sub section presents the result which in turn includes descriptive statistics, correlation analysis and the regression results. The second section is dedicated to the discussion of results.

4.1 Results

In order to achieve the study objective, the researcher adopted various statistical tools to analyze the collected data. The first section presents descriptive statistics which focuses on the distribution the data, mean, max and standard deviation, while the second section discusses correlation analysis. The final section presents the regression results for all the three models.

4.1.1 Descriptive statistics

Table 4.1 presents summary of statistics for the variables used in this study. It shows that the mean audit fee paid by the sampled banks during the study period (birr 133,312) is positively skewed with median (birr 106,250) with a very large range from a minimum birr 6000 to a maximum of birr 615,000. A similar picture emerges in respect of bank size with total assets in the sampled banks ranging from roughly birr 674 million (United Bank S.C, 2004) to over birr 158 billion (CBE 2012), with a mean value of birr 13 million. In line with the distributional properties of financial

figures (Naser et al. 2007) almost all the variables reported positive skewness and kurtosis except ROA which is negatively skewed.

All the banks do not experience loss throughout the study period with mean of Net Income birr 350,846,528 with maximum and minimum Net Income of above birr 5 billion and 4 million respectively. The table also reported a higher variation in the Efficiency of banks ranging from 94% to 30% with an average Efficiency ratio of 53.55%. The sampled banks inefficiency has reduced during the period at an average rate of 3% from 65% in 2004 to 50% in 2012. Another significant variation worth noting is in the non performing loan rate of banks (NPLR) which ranges from 38% to 0.1%.

Table 4.1 also point higher variations among the sampled banks in LQ, LGR and TRANSACT. The total loans of the sampled banks grow at an average rate of 20%. The banks proportion liquid to total asset (LQ) average was about 39.2% and shows a slight reduction from 40% in 2004 to 35% in 2012. The average ROA for the sampled banks during the period was 3.04%, with a maximum of 4.68 and minimum of 0.38%. The average profitability measured in ROA grows from 2% in 2004 to 3.5% in 2012 with average growth rate of 8%.

Furthermore, Table 4.1 reported descriptive statistics for the scaled variables used in estimating the normal component of LLP and the variables in the audit quality model as well. By construction ABFEE and ABLLP have zero mean and median. With regard to the loan variables the ratio of average LLP, CHOFS and BNPLS to beginning total assets are 0.006277, 0.003402 and 0.058779 respectively. Further the average ratios of BLLA, LOAN and CHLOAN scaled in beginning total asset shows 0.032456, 0.648197 and 0.122945 respectively.

Table 4.1 summary of descriptive statistics

Total Observation (n=72)

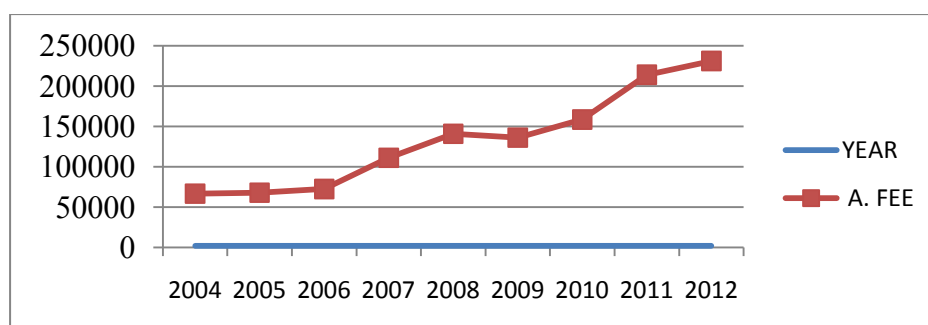
	Mean	Median	Maximum	Minimum	Std. Dev.
FEE	133,312	106,250	615,000	6,000	108,283
ASSET	12,702,539,718	4,794,784,277	158,804,428,984	674,000,000	25,358,794,887
LQ	0.3916	0.3864	0.5941	0.1581	0.0988
CAR	0.1616	0.1543	0.2842	0.0591	0.0524
TRANSACT	0.3177	0.2737	0.6135	0.1607	0.1255
EFFI	0.5355	0.5217	0.9369	0.2953	0.1068
ROA	0.030488	0.032965	0.046842	0.003803	0.008616
LGR	0.2329	0.2101	0.6931	-0.0272	0.1666
NPLR	0.0550	0.0346	0.3768	0.0010	0.0652
CHOFR	0.1286	0.0456	1.2859	0	0.2082
BIG	0.875	1	1	0	0.33304
LLP	0.006277	0.004206	0.039903	0	0.007359
BLLA	0.032456	0.024995	0.102397	0.005987	0.022409
LOAN	0.648197	0.646402	0.986088	0.266086	0.18232
CHLOAN	0.122945	0.10161	0.383357	-0.056825	0.099518
BNPL	0.058779	0.045284	0.300888	0.002557	0.052382
CHNPL	-0.000965	0.000327	0.048436	-0.059463	0.01803
CHOFF	0.003402	0.001264	0.027314	0	0.00515
PRIVATE	0.75	1	1	0	0.436051
ABLLP	0.0000	-0.000301	0.011038	-0.008621	0.003611
ABFEEL	0.0000	-0.002093	0.334213	-0.450218	0.164906
ABFEEBRR	2676.662	-56.90914	83943.63	-44337.98	23087.87
ABLLPUN	(28,086)	(542,770)	403,000,000	(154,000,000)	55,321,807
EBTPB	0.053695	0.053678	0.086816	0.024416	0.012814
CATA	0.110455	0.108162	0.192177	0.042139	0.033784
REVCH	0.3231	0.3259	0.9753	-0.0348	0.1790
PLLPB	0.0062	0.0044	0.0334	0.0000	0.0066

Source: own computation from the financial statements using Eviews 6

Figure 4.1 exhibited the trends in average audit fees over the period under investigation. Overall the graph shows an increase in audit fees during the period with a steep increase around the year 2006 and 2010. The annual banks average audit fees increased from 133,312 in 2004 to 231,189 in the year 2012, with an average increasing rate of 18.13%. Further, the highest growth in average annual audit fees was also recorded in the year 2007 by 53.27%. This may be partly due to the capital

requirement directive introduced in the year, which raise banks minimum paid up capital to 75 million birr and require banks to maintain minimum total capital levels not less than 8% of risk weighted assets.

Figure 4.1 Average audit fee trends



Source: own computation from the banks audited financial statement

For variation in fees that may arise out of banks ownership (public Vs private), ANOVA F-test was conducted to test if there is any significant difference between the audit fees paid by state owned and privately owned banks. The result indicated (see Table 4.2) that, the difference in the mean values of the two ownership groups is insignificant. However, a simple overview of the annual audit fees of each bank reveal a significant deference's actually exist between the two groups. For instance, CBE paid only 6000 birr for the year 2005 and 2006 which is more than 10 times less than minimum fees paid by the private banks for the same period. The higher fees paid in the earlier years may averaged out the lower fees paid in the prior years to result insignificance differences in the ANOVA test. To test for such periodic difference across the two group's equality test was conducted for the period 2008-2012 and the result confirmed that state banks pay higher fees on average at 5% significant level in this case.

Table 4.2. Test for Equality of Means of audit fees of state banks and private banks

Method	df	Value	Probability
t-test	70	-1.889400	0.0630
Satterthwaite-Welch t-test*	18.07112	-1.203300	0.2444
Anova F-test	(1, 70)	3.569831	0.0630
Welch F-test*	(1, 18.0711)	1.447930	0.2444

With regard to the auditors (Table 4.3), six audit firms audited the sampled banks during the studied period with the exception of Degefa Lemessa and Co. all of them are Grade –A” auditors and audited 89% of the sampled banks. ASC followed by Thomas holds the highest market share based on the No. of banks audited 29% and 24% respectively. Degefa Lemessa and Co. and Getachew Kassa and Co. maintain the lowest market share with 11% and 3% respectively. In terms of markets share based on the audited bank’s total asset, ASC is the leader followed by Thomas with 72 % and 11% respectively.

4.1.2. Correlation Analysis

Table 4.3 presents the Pearson correlation coefficients for the variables used in the audit fee model. As exhibited in the table, almost all the variables correlated with audit fee except loan growth, liquidity, CAR and BIG with the highest positive correlation coefficient with size (ρ 0.730646). This relationship suggests initial picture as to the nature of the relationship between explanatory variables and audit fees. As indicated earlier, various prior studies have shown that client size is the most dominant determinant of audit fees, which is reflected in the Table by the very strong positive correlation between SIZE and the dependent variable (i.e. LOGFEE).

Besides, the variables EFFI, TRANSACT and ROA too show a very strong correlation with audit fees. Accordingly, in a univariate setting, results are consistent with auditors charging higher audit fees for banks with higher loan growth rates and higher traction accounts and more profitable banks.

Table 4.3 also reported significant correlations among the explanatory variables. The highest reported significant correlation coefficient is between *LOGASSET* and TRANSACT with (ρ 0.674835) followed by EFFI and ROA, LQ and ROA with (ρ - 0.667306 and -0.064921) respectively. With respect to the structure of correlations among explanatory variables, it is worth noting the following. First, bank size (*LOGASSET*) is significantly correlated with TRANSACT, EFFI (the inverse measure of efficiency), CHFR and NPLR with (ρ 0.674835, -0.628963, 0.355910, and -0.328722) respectively. This suggests that banks tend to maintain more transaction (current) accounts relative to saving and time deposits as their size increases, the efficiency of the banks increase as the size of the bank increases. Further the loan charge off rate also increases with the size of the banks. With regard to the relationship between efficiency and bank size, literature suggest banks tend to be less efficient as their size increase due to their diverse operation in extended branch networks in wider geographical coverage. However, in contrast this study indicated that size is positively correlated with efficiency (i.e. negatively with inefficiency). It could be possibly argued that the economics of scope achieved by being a large size may also enhance the efficiency of large sized banks.

In contrast to the preceding model, the correlation among the variables in the audit quality model is lower (see table 4.4). In fact, it's not surprising given the dependent variable is the absolute value of the residuals from the LLP model. However, it may suggest some relationship among the variables of interest. Therefore, though the

correlation among the variables fails to gain significance, both log fee and abnormal fees are negatively correlated with abnormal loan loss provision suggesting that higher fees improve the audit quality. But positive abnormal fees show a positive relationship with ABLLP while the interaction term POSSABFEE*ABFEE turnout to negatively correlate with ABLLP⁵.

⁵ Variance inflation for the audit quality model variables is not reported for the fact that the variables are not significantly correlated except the interaction terms. Higher correlation among the interacted variables is likely to arise with the presence of interaction term in the model. To account for this, the interacted variables were also included in the regression separately but the result remains qualitatively unchanged.

Table 4.3: Correlations among Variables in Audit fee Model

Covariance Analysis: Ordinary

Included observations: 72

Correlation Probability	LOGFEE	LOGASSET	LQ	TRANSACT	EFFI	ROAAV	LGR	NPLR	CHFR	CAR	BIG	COMLN
LOGFEE	1.000000											

LOGASSET	0.730646	1.000000										
	0.0000***	-----										
LQ	-0.139814	0.121884	1.000000									
	0.2415	0.3078	-----									
TRANSACT	0.412448	0.674835	0.187767	1.000000								
	0.0003***	0.0000***	0.1142	-----								
EFFI	-0.505389	-0.628963	0.000173***	-0.493396	1.000000							
	0.0000***	0.0000***	0.9988	0.0000***	-----							
ROA	0.302534	0.101494	-0.064921	0.074460	-0.667306	1.000000						
	0.0098***	0.3963	0.5880	0.5342	0.0000***	-----						
LGR	0.059845	-0.164069	-0.469449	-0.040542	-0.150584	0.260445	1.000000					
	0.6175	0.1685	0.0000***	0.7353	0.2067	0.0271**	-----					
NPLR	-0.540769	-0.328722	0.039877	-0.075735	0.586147	-0.582667	-0.196404	1.000000				
	0.0000***	0.0048***	0.7395	0.5272	0.0000***	0.0000***	0.0982*	-----				
CHFR	0.232874	0.355910	0.083519	0.422802	-0.231055	0.155702	-0.191789	-0.156765	1.000000			
	0.0490**	0.0022***	0.4855	0.0002***	0.0508*	0.1915	0.1065	0.1885	-----			
CAR	0.196173	0.108066	0.461230	0.154304	-0.211981	0.353878	-0.127175	-0.265921	0.183176	1.000000		
	0.0986*	0.3662	0.0000***	0.1956	0.0738*	0.0023***	0.2871	0.0240**	0.1235	-----		
BIG	0.065676	0.010109	0.028475	0.117999	-0.137024	-0.011282	0.071663	0.103037	-0.383367	-0.139787	1.000000	
	0.5836	0.9328	0.8123	0.3235	0.2511	0.9251	0.5497	0.3891	0.0009***	0.2415	-----	
COMML	0.332242	0.202988	0.037275	0.217831	-0.252382	0.159778	0.269618	-0.344517	0.181600	0.340151	-0.181630	1.000000
	0.0044***	0.0872*	0.7559	0.0660*	0.0325**	0.1800	0.0220**	0.0030***	0.1268	0.0035***	0.1268	-----

SOURCE: Financial statement of sampled commercial banks and own computation through Eviews 6

Notes: numbers with asterisk *, ** and ***, denote significance at the 10%, 5% and 1% levels respectively.

Table 4.4: Correlations for the variables used in the audit quality model

Covariance Analysis: Ordinary

Sample: 1 72

Included observations: 72

Correlation											
Probability	ABABLLP	LOGFEE	ABFEE	POSABFEE	ABFEE*POS	LOGASSET	CATA	EBTP	REVCHI	PLL	BIG
ABABLLP	1.000000										

LOGFEE	-0.097319	1.000000									
	0.4161	-----									
ABFEE	-0.034233	0.295955	1.000000								
	0.7753	0.0116**	-----								
POSABFEE	0.057652	0.233963	0.827535	1.000000							
	0.6305	0.0479**	0.0000***	-----							
ABFEE*POSABFEE	-0.042559	0.219864	0.879404	0.718999	1.000000						
	0.7226	0.0635	0.0000***	0.0000***	-----						
LOGASSET	-0.219015	0.725127	0.011625	-0.004448	0.030568	1.000000					
	0.0645*	0.0000***	0.9228	0.9704	0.7988	-----					
CATA	-0.105082	-0.038972	-0.004966	-0.025297	-0.020536	-0.338688	1.000000				
	0.3797	0.7452	0.9670	0.8329	0.8641	0.0036***	-----				
EBTPB	0.113294	0.136385	-0.006317	0.017795	-0.095297	-0.211805	0.490808	1.000000			
	0.3434	0.2533	0.9580	0.8821	0.4259	0.0741*	0.0000***	-----			
REVCH	-0.113182	0.038291	0.078114	0.024271	0.023210	-0.207578	-0.047087	0.444532	1.000000		
	0.3438	0.7495	0.5143	0.8396	0.8466	0.0802	0.6945	0.0001***	-----		
PLL	0.157167	-0.482687	0.138106	0.172586	0.149652	-0.502857	-0.004760	0.126503	0.069892	1.000000	
	0.1873	0.0000***	0.2473	0.1471	0.2096	0.0000***	0.9683	0.2896	0.5596	-----	
BIG	0.018963	0.065676	-0.008208	-0.041996	-0.027067	0.008086	-0.140441	0.071347	0.152781	0.089585	1.000000
	0.8744	0.5836	0.9454	0.7261	0.8214	0.9463	0.2393	0.5515	0.2001	0.4542	-----

SOURCE: Financial statement of sampled commercial banks and own computation through Eviews 6

Notes: numbers with asterisk *, ** and ***, denote significance at the 10%, 5% and 1% levels respectively.

Here it is important to note that significant correlation among explanatory variables may pose a severe multicollinearity problem in the multivariate analysis. Correlations among the independent variables could possibly confound interpretation of the regressions by biasing coefficients, statistical significances, and even directional signs (Firth 1997). Therefore various tests were conducted to examine the severity of the problem. First none of the explanatory variables correlation coefficients exceed 0.8 with a maximum (ρ 0.67). As Frith (1997) and Naser et al (2007) suggested correlations below 0.80 in absolute value do not pose severe multicollinearity problem. However, (Naser et al 2007) argued the absence of high correlation among the variables does not always mean there is no multicollinearity problem. Hence to further detect the presence of multicollinearity problem, a diagnostic procedure-variance inflation Factor is also conducted. The largest VIF reported value is -2.53 and 5.17 for the audit fee model and LLP model respectively which is far below the maximum tolerable amount for severe multicollinearity problem. VIF below 10 indicates the absence of multicollinearity problem (Boo and Sharma 2008).

Table 4. 5. Variance Inflation Factor

Variables in the audit fee model		Variables in the LLP Model	
Variables	VIF	Variables	VIF
LOG(ASSET)	-2.53	BLLA	5.17
LQ	1.72	CHNPL	1.59
TRANSACT	2.54	CHLOAN	2.77
EFFI	2.08	CHOFF	1.15
ROAAV	2.14	BNPL	3.64
LGR	1.72	LOAN	2.89
NPLR	1.72	PRIV	2.48
CHFR	1.74		
CAR	1.85		
BIG	1.40		
COMML	1.52		

Source: own computation from sampled banks through Eviews 6.

4.1.3. Regression results

In this section the hypothesis articulated in the prior chapter are tested and the results are presented. First, the results of the audit fee model estimated through Panel least square is presented followed by the results for LLP model. In the final section the results for the model that links the abnormal audit fee and audit quality are presented.

4.1.3.1. Regression result for the determinants of audit fees

In Model 1 the researcher specified panel fixed effect model by which banks annual audit fees are regressed by various bank level factors and auditor attributes i.e.

$$\text{LOGFEE}_{it} = \alpha_i + \beta_1 \text{LOGASSET}_{it} + \beta_2 \text{LQ}_{it} + \beta_3 \text{TRANSACT}_{it} + \beta_4 \text{EFFI}_{it} + \beta_5 \text{ROA}_{it} + \beta_6 \text{LGR}_{it} + \beta_7 \text{NPLR}_{it} + \beta_8 \text{CHOFR}_{it} + \beta_9 \text{CAR}_{it} + \beta_{10} \text{COMMLN}_{it} + \beta_{11} \text{BIG}_{it} + \hat{\epsilon}$$

Table (4.6) presents panel estimates for Model 1 which is the model typically employed in bank audit fee literature⁶.

Table 4.6 Regression result for the determinants of audit fees

Variable	Expected coefficient	Coefficient	Std. Error	t-Statistic	Prob.
C		-7.143929	4.670628	-1.529543	0.1331
LOGASSET	+	0.66967	0.215246	3.111187	0.0032**
LQ	-	-1.78712	0.350121	-5.10429	0.0000**
TRANSACT	+	1.853512	0.884325	2.095962	0.0417*
EFFI	+	4.211219	0.737829	5.707579	0.0000**
ROA	+	24.63501	5.791797	4.253431	0.0001**
LGR	+	0.59659	0.195921	3.045044	0.0039**
NPLR	+	-3.132663	0.874188	-3.583513	0.0008**
CHOFR	+	-0.033873	0.095681	-0.354021	0.725
CAR	-/+	1.791202	0.653722	2.740004	0.0088**
BIG	+	0.539837	0.091288	5.913531	0.0000**
COMMLN	+	0.199469	0.312278	0.638753	0.5262
Cross-section fixed (dummy variables)					
Period fixed (dummy variables)					

$R^2 = 90.97\%$, $\text{Adj}R^2 = 85.75\%$, S.E. of regression = 0.207138 F-statistics = 17.43612 Prob(F-statistics = 0.000000), and Durbin-Watson stat = 1.63483⁷

Source: own computation from sampled banks through Eviews 6.

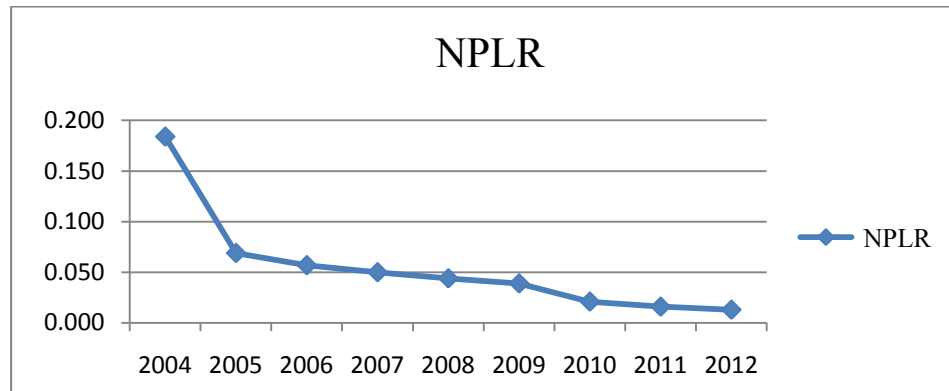
⁶ The coefficients are estimated based on cluster robust standard errors consistent for both heteroskedasticity and autocorrelation. Tests for normality and serial correlation on the residuals was tested by regressing residuals on the first and 2nd lag conducted(see appendix)

⁷ P-values with asterisk * and **, denote significance at the 5% and 1% levels respectively.

Overall, the results reported for this model are very similar to those obtained in prior studies for other countries. First, analogous to prior studies, the model has high-explanatory power (adjusted R^2 of 85.75 %, Table 4.9) and a highly significant F – statistics values (F-0.0000). The higher explanatory may be due to the risk and complexity variables incorporate the regulatory concerns. This suggests the model represent a fair prediction of audit fees in banking industry in Ethiopian commercial banks. For instance, prior researchers in bank audit fee literature using similar models found high explanatory power of their models (e.g. field's et al 2004, 88% Lobo et al 2010 80% and Akinpelu et al 2013 80%). Second, most coefficients have the predicted sign and the majority of them attain statistical significance at the conventional.

As can be observed from table 4.6 above, bank size, liquidity, efficiency, loan growth, profitability, non performing loan, capital adequacy ratio and auditor size are statistically significant factors that influence the determination of audit fees in Ethiopian commercial banks. All the variables are significant at 1% level except transaction accounts, commercial loan and charge off rates. While transaction account attains significance at 5% level, commercial loan and charge off rates remain insignificant at any conventional level. It is also worth noting from the result that contrary to the expected positive coefficient sign, non-performing loan and charge off rates reported negative sign. In relation to this as can be seen from figure 4.2 the non performing loan rates reported a declining trend throughout study period.

Figure 4.2 Trends of Average NPLR of sampled banks



Source: own computation from sampled banks through Eviews 6

4.1.3.2. Results for Banks earning management

As previously discussed in the methodology section, in order to see the link between auditor independence and level of earning management the researcher used a two stage procedures since both are not directly observable. Therefore, abnormal fees (the residual from model 1) and abnormal loan loss provision are used as a proxy for the economic bond and the level of earning management respectively. This requires decomposing the abnormal component of loan loss provision from the normal (non-discretionary accrual). To do so, the researcher regressed loan loss provision on various factors which are usually considered influencing it in *Model 2*. The Estimation results for this model are presented in Table 4.7 below.

$$LLP = \alpha + \beta_1 BLLA + \beta_2 BNPL + \alpha \beta_3 CHNPL + \beta_4 CHOFF + \beta_5 CHLOANS + \beta_6 LOANS + \beta_7 PRIV + YEARCONTROLS + \hat{\epsilon}$$

Table 4.7 Estimation results for abnormal Loan Loss Provision
Dependent variable LLP

Variable	Expected coefficient	Coefficient	Std. Error	t-Statistic	Prob.
C		-0.006823	0.00302	-2.2573	0.0279
BLLA	-	-0.077276	0.07144	-1.0817	0.284
CHNPL	+	0.195883	0.04945	3.96163	0.0002**
CHLOAN	+/-	-0.004063	0.01262	-0.3219	0.7487
CHOFF	+	0.34219	0.1616	2.11747	0.0387*
LOAN	+	0.015623	0.00679	2.30178	0.0251*
BNPL	+	0.10458	0.04229	2.47313	0.0165*
PRIV	+/-	-0.00247	0.00202	-1.2205	0.2274
Effect specification					
Period fixed effect(period dummy variables)					

$R^2 = 57.80\%$, $AdjR^2 = 46.49\%$ S.E. of regression = 0.004228 F-statistics = 5.111988
Prob(F-statistics = 0.000003), and Durbin-Watson stat = 1.602220

Source: own computation from sampled banks through Eviews 6

Note: p-values with asterisk * and **, denote significance at the 5% and 1% levels respectively.

As can be seen from the table, all of the variables attain significance at conventional levels except BLLA and PRIV with their expected coefficient sign. CHNPL exhibited a positive coefficient (0.195883) with a highly significant at less than 1% levels (t-statistic 3.96163 and p-value 0.0002)

In addition, CHOFF, LOAN and BNPL are also statically significant at 5% level. As expected BLLA exhibited a negative sign suggesting that lower allowance at the beginning of the year requires a higher LLP at the end of the year and vice versa. BNPL and CHOFF have shown direct relationship with LLP implying that higher NPL and CHOFF at the beginning of the period require higher provision at the end of the period. This result is intuitively appealing since higher NPLR and CHOFF always requires a higher LLP. Comparatively, the model has good explanatory power for

normal (non discretionary) component of LLP, with adjusted R-square 47.38% (for example, using similar model Lobo et al. (2010) adjusted R^2 was about 66.32%).

4.1.3.3. Results for the audit quality model

For this model the residuals from model 2 were taken as an abnormal component of LLP to examine the link between abnormal audit fees and abnormal LLP that banks usually use as earning management tool. Table 4.8 reported the results for model 3 in which ABLLP is regressed on ABFEE controlling for bank size (LOGASSET), bank leverage (LEV), bank performance proxied by earning before tax and Loan loss provision (EBTP), change in total revenue (CHREV), the level of accruals measured through lagged LLP (PLLP) and auditor (BIG).

$$ABLLP = \alpha + \beta_1 \text{LOGFEE} + \beta_2 \text{ABFEE} + \beta_3 \text{POSABFEE} + \beta_4 \text{POSABFEE} * \text{ABFEE} + \beta_5 \text{LOGASSET} + \beta_6 \text{CATA} + \beta_7 \text{EBTP} + \beta_8 \text{CHREV} + \beta_9 \text{PLLP} + \beta_{10} \text{BIG} + \epsilon$$

Table 4.8 Estimation result for the audit quality model

Dependent variable /ABLLP/					
Variable	Expected coefficient	Coefficient	Std. Error	t-Statistic	Prob.
C		0.02065	0.00815	2.53282	0.0139
LOGFEE	+	0.00156	0.00091	1.71206	0.092*
ABFEE	+	-0.0045	0.00442	-1.0234	0.3102
POSABFEE	+	0.00063	0.0009	0.69863	0.4874
ABFEE*POSABFEE	+	0.00266	0.00595	0.44757	0.6561
LOGASSET	-	-0.0015	0.00047	-3.2332	0.002***
CATA	-	-0.0364	0.01048	-3.477	0.0009***
EBTP	+	0.06946	0.02942	2.36101	0.0214**
REVCH	-	-0.0062	0.00193	-3.1902	0.0022***
PLLP	-	-0.0072	0.03757	-0.1928	0.8478
BIG	-	-0.0002	0.00078	-0.2308	0.8183

$R^2=27.54\%$, $\text{Adj}R^2 = 15.66\%$, S.E. of regression = 0.002107, F-statistic 2.318852
 Prob(F-statistic) 0.021891, AND Durbin-Watson stat 2.112505

Source: own computation from sampled banks through Eviews 6.

Note: p-values with asterisk *, ** and *** denote significance at the 10%, 5% and 1% levels respectively⁸.

The results for model 3 reported above links the level of earning management with abnormal audit fees. The Model fairly predicts the abnormal component of LLP in

⁸ Various tests for the audit quality model are included in the appendix.

absolute value with an adjusted R-square 15.66%, with significant F-stat. The result confirms that earning management is positively related to the current operating performance of the bank proxied by earning before tax and LLP (EBTP). LOGASSET and CATA are also significant at 1% level. Consistent with theory, the negative coefficient in LOGASSET and CATA, suggest that large banks and banks with higher capitalization ratio do not seem to engage in earning management. The positive coefficient in EBTP indicates earning management is directly related to banks performance while the negative sign for past level of accruals (PLLP) confirm the negative relationship with earning management. As expected, though lacks significance large auditors (BIG) are negatively related to earning management.

4.2. Discussion of results

The regression results presented in the previous section are discussed in greater detail in this section. The research hypotheses are also tested and alternative explanations are provided for the reported result among the relationship between the dependent variable and independent variables. The first section presents discussion of the results for audit fee determinants factors while the section deals with discussions regarding the audit quality.

4.2.3. Discussion of results for determinants of audit fee

This section presents discussion of the results for audit fee model in considerable detail. Alternative explanations are provided for the reported relationship among audit fees and the determinant factors taking in to account the country context.

4.2.3.1. Bank Size

In line with prior studies (both industrial and financial firms), the size of the bank is highly significant at less than 1% level (p-value 0.0032) with (coefficient 0.67) and t-

static 3.11). The significant size coefficient can be interpreted as a 1% change in the bank's total asset accompanied by 66.97% increase in audit fees. This result is consistent with various prior empirical studies recurring finding of a positive relationship between the firm size and audit fees, both in financial and non financial sectors. For example, (Simunic 1980; O'Keefe, et al., 1994; Gonthier-Besacier and Schatt, 2007; Caneghem, 2010) find significant positive relationship between firm size and audit fees in non financial sectors. This size effect reasoned to affect audit fees through various attributes related to complexities and risk associated with large size firms. Bank audit literature demonstrates the same effect of bank size. Cullen et al. (2012) reported the client size by itself explains over 70% variances in audit fees. It is also argued that Banks size reflects its effect on fees through direct and indirect way, since various bank characteristics are correlated with size. Generally, the positive and significant relationship between size and audit fees in the result leads to fail to reject the first hypothesis (i.e. bank size has positive and significant relationship with audit fees).

4.2.3.2. Liquidity risk

With regard to the liquidity proxies, LQ (liquid assets to total assets) is statistically significant at less than 1% level (p-value 0.0000) with negative coefficient (-1.79 and t- static -5.10). This result indicates holding other things constant; a 1 percent increase in LQ results in 1.79% decrease in audit fees. This negative coefficient for LQ is in line with (Fields et al 2004) result for liquidity measure (securities/ total assets) indicating that banks with higher level of liquid assets relative to their total assets pay lower audit fees. As (Fields et al 2004) suggested this may be due to the fact that liquid asset portion of the banks portfolio contain assets which are easy to

value (e.g. Treasury bills, repos) and therefore, have lower audit risk and complexity⁹. The liquidity proxy used in this study allows a more concrete direct relationship than the measures used in the characterizing banks audit fee studies.

As predicted, the other measure of liquidity risk TRANSACT (Demand deposit/Total deposits) is also significant at 5% (p-value 0.0417 and t-statistic 2.09) with positive coefficient (1.85). This implies auditors tend to charge more fees for banks maintaining high proportion of demand deposits relative to their total deposits. Intuitively such relationship is expected since demand accounts are usually associated with high transaction costs, complexity and liquidity risk (Fields et al 2004). Since this variable also shows the funding structure of the banks i.e. banks which excessively rely on demand deposit are likely to suffer from liquidity problem (liquidity risk) in contrast to others. However, which particular audit fee driver (risk/complexity) is responsible for the associated higher audit fee is not clear. (Fields et al. 2004) argued the higher audit fees for banks with higher transaction accounts is attributable to both risk and complexity which arise out of maintaining higher level of such accounts. In contrast, Ettredge et al. (2011) contended that the increase in fees with the level of these accounts is only driven by the complexities involved with these accounts.

4.2.3.3. Efficiency risk

Consistent with prior studies, for operating risk proxy i.e. EFI defined as $\text{Total revenue (interest+ noninterest income)}/\text{Total expenses (interest + noninterest income)}$, the result shows statistically significant positive relationship with audit fees at less

⁹ Investments in T-Bills have also been tried as a measure of liquidity, although the result is not significant the sign is consistent with liquid assets. The insignificance may be due to the fact that Ethiopian banks do not have more alternatives to invest on short term securities other than government T- bills as a result short term investment amounts are very small relative to their total assets with a maximum of 36% and mean of 3.9% for the studied period

than 1% level (p-value 0.0000) with (coefficient 4.21 and t-static 5.71). It's worth noting that since EFICIENCY ratio is an inverse measure of banks operating efficiency, the higher the efficiency ratio entails the lower the efficiency for the bank and the more difficult it is for the bank to earn a profit and thus to bolster its capital account. Management deficiency can attract fraud and errors in management and operations leading to higher audit risk and the associated fee (Wui 2011). Gaganis and Pasiouras (2007) also found that inefficiency as one of the reason for auditors to issue qualified audit opinion in Asian banks. This result is consistent with (Fields et al 2004, Schneider and Tran 2013 and Ettredge et al. 2011) who found positive relationship between audit fees and efficiency.

4.2.3.4. Profitability

Prior audit fee studies used various financial performance proxies (ROA, ROE and loss) for both industrial and financial companies. This study used ROA only for the fact that the sampled banks do not experienced loss during the studied period¹⁰. The result shows a significant positive relationship between ROA and audit fees at less than 1% level (P-value 0.0001) with (coefficient 24.63and t-static 4.25). This finding is in line with (Joshi and AL-Bastaki (2000) cited in Naser, et al., 2007) argument that companies with a higher level of profit are subject to a further inspection of the related revenue and expense accounts leading to raise audit effort/time on the auditor part and hence the auditor charges a higher audit fee to a more profitable banks.

4.2.3.5. Credit risk

With regard to the credit risk measures, both asset quality proxies (non performing loan rates and Net-loan charge offs) turn out to be contrary to the expected coefficient

¹⁰ Because of the fact that the sampled banks do not experience loss during the studied period, Standard deviations of returns calculated over three years period interval was initially included in the regression but it remained insignificant.

sign. But only NPLR attain significance at 1% level while CHFR remain insignificant. This result is not consistent with (Fields et al. 2004) result that report positive and significant relationship between both asset quality measures and audit fees.

The credit risk proxy attributable to the loan portfolio composition differences, commercial loan (COMML) exhibit positive coefficient as expected but failed to gain significance at conventional level¹¹. The credit risk proxies don't seem to influence audit fees and even found to be contrary to the expected positive sign in case of NPL¹². This can be viewed as evidence for the fact that auditors do not tend to put much emphasis on the asset quality when pricing their audit services. Perhaps this may be due to fact that NPLS have been declining continuously throughout the studied period on banks level as well as yearly averages of the sampled banks. As can be seen from the figure 4.2 the yearly averages of NPLR declined from 18.3% in 2004 to about 13% in 2012.

4.2.3.6. Capital risk

The estimated coefficient for capital risk proxy risk weighted Capital adequacy ratio¹³ (CAR) exhibited positive and statistically significant at 1% level (0.0088) with (coefficient 1.79 and t-statistic 2.74). Theoretically, the relationship between audit fees and capital risk should be negative. However, as suggested by (Fields et al 2004) the relationship between audit fees and the risk-adjusted capital ratio could conceivably be positive or negative noting that riskier banks are often required by regulators to maintain larger regulatory capital cushions. In our case NBE sets the minimum CAR 8% and the sample banks average capital adequacy ratio (CAR) is about 16% for the

¹¹ Different loan portfolio compositions proxies (agricultural loans and construction loans) were also included in the model initially but both are highly correlated with commercial loans therefore excluded from the model.

¹² Instead of NPLR Loan Loss provision was also tried but the result remain qualitatively unchanged.

¹³ To test whether the capital risk proxy sensitive to measurement error capital to total asset was also included in the model but the result remains unchanged.

studied period, signifying that they have ratios well above the minimum requirement. Generally, this result suggests that auditors tend to give less emphasis on capital risk in the determination of audit fees for Ethiopian commercial banks.

4.2.3.7. Auditor size

Finally, the estimated coefficient for auditor size (BIG) showed positive sign and statistically significant at 1% level (0.0000). This suggests Grade –A” auditors charge higher audit fees than the others. This result is also consistent with –big auditor’s premium hypothesis” which conjectured large audit firms provide a higher quality audit and charge higher audit fees for their service. The result is consistent with various previous researches who found fee premium for large auditors, (e.g. Palmrose 1986, Francis and Simon 1987 Fields et al 2004).

With regard to the regulatory risk concerns i.e. CAMEL ratios auditors tend to price liquidity and efficiency only. But auditors also consider other factors which are directly related to audit effort and other bank attributes. For instance the study find bank size, loan growth, profitability and auditor’s size are significant determinants of bank audit fee as well.

The insignificance of the credit risk may also be due to its highly competitive market set up and the presence of vigilant regulatory body. Given high level of competition, auditors may find it difficult to consider every aspect of the regulatory concern. As Boo and Sharma (2008) suggested regulatory oversight partially substitutes the external audit as a monitoring mechanism and influences the extent of auditing provided by the external auditor. They further find that auditors perceive lower risk in regulated companies and, therefore, design and execute less extensive audits.

The coefficients of the period specific effect (period dummy variables) also revealed negative coefficients for the period before 2008 except in the year 2004 indicating audit fees were lower for the period. The positive coefficients of audit fees after 2008 also suggest audit fees increased significantly in the later years. To this connection, the various NBE directives may also influence audit fees accordingly. For example, the new capital requirement rule introduced in 2007, the credit caps that were in place from 2008-2011, the requirement for banks to prepare their financial statement in accordance with IFRS and the directive that enforce banks to purchase NBE bills. Such additional requirements entail a higher/ extra audit effort on the auditor to confirm whether such regulatory (NBE) guidelines are strictly followed.

In respect of the cross-sectional fixed effects (the coefficients of the cross-sectional dummy variables) exhibit negative coefficients for AIB, UB, WB and CBE suggesting that other things remain unchanged, these banks pay a lower audit fees. One possible explanation for the lower audit fees for AIB and CBE may be their annual audits were conducted by the state owned audit firm, Audit Service Corporation (ASC) during most of the periods for AIB and all annual audits in case of CBE. Further, the fiscal year end for AIB was December 31 till the year 2008 which is not relatively busy season for the reason that most of the company's fiscal year ends on June 30 in Ethiopia. The lower audit fees paid by CBE to another state owned audit firm may also raise questions on whether ASC operates independently (if not without influence) especially in the earlier years of the study. The study fails to account for audit client bank and audit firms' ownership for the fact that fixed effect models exclude/cannot be estimated with the presence such time invariant variables.

4.2.4. Discussion of results for audit quality

The coefficients of interest in the audit quality model are only logfee, ABFEE AND POSS-ABFEE for the fact that the purpose is only to see the link between economic bond and earning management. As can be seen from the table 4.6 only log fee is significant at 10% with positive coefficient while the other variables of interest in the regression didn't gain statistical significance at conventional level. Even though, the significance of logfee suggest auditors compromise audit quality for banks paying higher audit fees, it is usually argued that audit fees doesn't capture the economic bond or likely to raise nontrivial measurement error (Choi et al. 2010). Further, auditors may charge higher audit fees for companies which are likely to manage earning because of the risk involved with such clients.

Although statistically insignificant, ABFEE exhibited negative coefficient suggesting that ABFEE decrease when ABLLP are higher in absolute value. This result is totally paradoxical with the proposed hypothesis. It also contradicts with the result reported for the relation between audit fees and absolute value of discretionary accruals. However, it is important to note that ABFEE is composed of both positive and negative components and auditor independence is only likely to be impaired if a significant positive relationship exist between ABFEE and ABLLP (Choi et al. 2010). To account for this, the interaction term POSS-ABFEE* ABFEE is introduced in the regression. Even though, the coefficient takes a positive sign in this case, it is statistically insignificant. This result can be interpreted in alternative ways in relation to the auditor's independence and the audit quality. First, with regard to auditor's independence, given intense competition in the audit market coupled with the regulatory scrutiny may possibly make it difficult for auditors to charge abnormally higher audit fees that could threaten their independence. Further, it can be intuitively

argued taking in to account the lower level of fees rates and the competitive forces auditors in fact may prefer to extend their tenure and reap normal fees from their continuing relationship. In general, the result suggests auditors do not seem to compromise their independence for the sake of securing abnormally high audit fees as long as the measure of earning management employed in this paper is concerned.

Secondly, the maintenance of auditor independence doesn't always imply good audit quality. In addition to the auditor independence auditor technical capabilities and expertise, level of extensive tests and the presence of audit quality reviews also determine the quality of the audit. The positive relationship of the absolute value of ABLLP with EBTP and CHREV indicates that banks in deed manage earning for income smoothing purpose. But this is not related to auditor's impairment in any way. In fact, the lower fee level partly due to the stiff competition in the country may be considered as a reason for auditors not to plan and conduct an extensive standard quality audit that could possibly enable them to reveal such opportunistic behavior.

To sum up with results and discussion, Ethiopian audit firms tend to value size of the bank, operating efficiency, liquidity, capital adequacy, auditor size and profitability in the determination of bank audit fees. Among the variables considered important by regulators (i.e. CAMEL ratios), only asset quality/ credit risk found to be insignificant. With regard to audit quality the result did not show any auditor independence impairment for the sake of securing higher audits fees. In fact, the result suggests banks engage in earning management activities. But, auditors do not collaborate with banks to manage earning as far as the economic bond measure adopted in this study is concerned. This may be due to moral hazard problem that leads auditors to plan less intensive audit. Further, the lower audit fee level may not also allow auditors to conduct intensive audits.

Chapter Five: Conclusion and Recommendation

5.1. Conclusion

This study assesses audit fee determinant factors in the Ethiopian banking industry. The study used risk and complexity variables peculiar to the banking industry and other variables that are commonly found to influence the variation in audit fees in other industries as well. The study also examined whether abnormal audit fees influence auditor independence and audit quality by using discretionary component of loan loss provision as proxy for earning management (i.e. audit quality measure). Based on the analysis made in the previous chapter the study concludes the following points:

- With regard to the determinants of audit fees bank size, liquidity, loan growth, efficiency, profitability, auditor size, capital adequacy ratio are found to be the major factors influencing the variation in audit fees in the Ethiopian commercial banks. From the analysis it can also be observed that auditors inclined towards factors related audit effort proxies than the risk proxies. Typically, auditors concern with bank size, loan growth and partially and liquidity are connected directly audit effort. Perhaps, the liquidity measure used in this paper incorporates both complexity and risk dimensions. On the complexity perspective, since liquid assets include currency and coins and cashes associated with ATM operation, which also require more audit effort to count and confirm their balance. Further, the significance of TRANSACT (demand deposits /total deposits) which measure the funding risk as well as well as the complexities involved with maintaining such accounts suggest auditors are more concerned for banks liquidity risk.

- The insignificance of the all the three credit risk proxies, asset quality (non performing loans and net loan charge offs) and commercial loans indicates auditors do not seem to value banks credit risk exposure in audit fee determination. Specifically, the insignificance asset quality, which is the major risk drivers of banks in the financial crisis, is surprising. This leads to conclude that auditors focus on factors which are more likely to raise audit hours and hence effort than the risk factors.
- Among the factors considered important by the regulatory bank, auditors tend to value the liquidity position of banks, management efficiency and capital adequacy in determining the amount of audit fees. However the study found that auditor seem to don't bother about the asset quality of banks in their fee determination.
- In relation to auditor independence and audit quality, the study didn't find any significant relationship between abnormal audit fees and abnormal loan loss provision (i.e. measure of earning management and hence audit quality). From this it can be deduced that external auditors do not compromise their independence for the sake of securing abnormally higher audit fees as far as the measure of audit quality measure is concerned. In this regard the presence of vigilant regulatory oversight and the higher litigation risk in the sector may also be the reason for auditors to maintain their independence.
- The study also found that large auditors proxied in terms of license grades issued by OFAG, Grade "A" auditors tend to charge higher audit fees than the others. Several reasons could be forwarded for this large auditor's premium in our context also. First, large firms usually thought to provide higher audit quality and have also higher reputational capital to maintain and thus charge a higher audit fee. In

addition some of this grade “A” auditors have affiliations to the international BIG4 audit firms (for instance HST and Bromhed are affiliated with Deloitte and PricewaterhouseCoopers respectively) this may raise costs associated with audit technologies similar to their affiliated companies and hence the total audit cost. This higher audit cost is reflected in their higher audit fees charged to their audit client banks.

5.2. Recommendations

Based on the findings of the research the following recommendations are provided:

- Since the banking sector, is characteristically different by the presence of vigilant regulatory oversight, it is recommendable to consider factors which are important to the regulatory bank. In fact, this study find that auditors do consider some of these regulatory concerns but it still remains with regard to some of these important factors. The banking sector internationally lessened a lot as to how credit risk could potentially threaten their survival/ going concern. Further, Ethiopian commercial banks significantly increased their off-balance sheet activities by devoting a large sum of money which potentially increases the banks risk exposure by threatening their capital adequacy ratio. Therefore, the researcher recommends auditors to take in to account banks asset quality/ credit risk, which are important to regulators, in their determination of audit fees. The better alignment of the regulatory interest would help auditors in terms of avoiding costly litigation associated with audit failure.

- Apart from factors that trigger higher audit effort, audit firms which audit Ethiopian commercial banks should also focus on risk factors as well, as they are exposed to a higher litigation risk in case of audit failure.
- The study found that Ethiopian banks actually engage in earning management activities but auditors failed to inspect such practices. To curb such opportunistic behavior of banks the researcher recommends auditors to conduct intensive audit. Further the researcher recommends regulators such as NBE to reconsider how the audit fees for banks should be determined. Lower fee by itself would not allow auditors to conduct good quality audit. Therefore, lower fee levels triggered by the stiff competition in the audit market are likely to end up with lower quality standard audits.
- This study found that Big (Grade A) auditors provide a better quality audit than the smaller counter parties. Therefore, the researcher recommends commercial banks to get audited by such Big auditors thereby enhancing their financial transparency through better quality audit.
- Finally, as suggestions for future research, the researcher recommends researchers to scrutinize audit fees and audit quality in non-financial industries, the impact of audit tenure on auditor's independence and quality.

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Appendix

Table 1a: Correlations among the variables used in the estimation of ABLLP

Covariance Analysis: Ordinary

Sample: 1 72

Included observations: 72

Correlation Probability	LLP	BLLA	CHNPL	CHLOAN	CHOFF	LOAN	BNPL
LLP	1.000000						

BLLA	0.191431	1.000000					
	0.1072	-----					
CHNPL	0.300638	-0.459720	1.000000				
	0.0103**	0.0000***	-----				
CHLOAN	0.334404	-0.307733	0.330525	1.000000			
	0.0041***	0.0085***	0.0046***	-----			
CHOFF	-0.052062	0.194776	-0.260845	-0.275808	1.000000		
	0.6641	0.1011	0.0269	0.0190**	-----		
LOAN	0.575258	0.015035	0.323793	0.691003	-0.319176	1.000000	
	0.0000***	0.9002	0.0055***	0.0000***	0.0063***	-----	
BNPL	0.414036	0.796912	-0.412424	-0.029300	0.015192	0.288962	1.000000
	0.0003***	0.0000***	0.0003***	0.8070	0.8992	0.0138**	-----

SOURCE: Financial statement of sampled commercial banks and own computation through
Eviews 6

Notes: numbers with asterisk *, ** and ***, denote significance at the 10%, 5% and 1% levels respectively.

Table 2a: Estimation result for Audit fee model

Dependent Variable: LOG(FEE)

Method: Panel Least Squares

Sample: 2004 2012

Periods included: 9

Cross-sections included: 8

Total panel (balanced) observations: 72

White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.143929	4.670628	-1.529543	0.1331
LOGASSET	0.669670	0.215246	3.111187	0.0032
LQ	-1.787120	0.350121	-5.104290	0.0000
TRANSACT	1.853512	0.884325	2.095962	0.0417
EFFI	4.211219	0.737829	5.707579	0.0000
ROA	24.63501	5.791797	4.253431	0.0001
LGR	0.596590	0.195921	3.045044	0.0039
NPLR	-3.132663	0.874188	-3.583513	0.0008
CHFR	-0.033873	0.095681	-0.354021	0.7250
CAR	1.791202	0.653722	2.740004	0.0088
BIG	0.539837	0.091288	5.913531	0.0000
COMMLN	0.199469	0.312278	0.638753	0.5262

Effects Specification

Cross-section fixed (dummy variables)

Period fixed (dummy variables)

R-squared	0.909700	Mean dependent var	11.60750
Adjusted R-squared	0.857527	S.D. dependent var	0.548773
S.E. of regression	0.207138	Akaike info criterion	-0.030870
Sum squared resid	1.930771	Schwarz criterion	0.822880
Log likelihood	28.11131	Hannan-Quinn criter.	0.309011
F-statistic	17.43612	Durbin-Watson stat	1.634831
Prob(F-statistic)	0.000000		

Table 2b: Estimation result for LLP model

Dependent Variable: LLP
Method: Least Squares
Sample: 1 72
Included observations: 72

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.006823	0.003023	-2.257349	0.0279
BLLA	-0.077276	0.071439	-1.081707	0.2840
CHNPL	0.195883	0.049445	3.961634	0.0002
CHLOAN	-0.004063	0.012621	-0.321887	0.7487
CHOFF	0.342190	0.161604	2.117469	0.0387
LOAN	0.015623	0.006787	2.301784	0.0251
BNPL	0.104580	0.042287	2.473127	0.0165
PRIV	-0.002470	0.002024	-1.220454	0.2274
D4	0.002153	0.003299	0.652541	0.5167
D5	9.99E-05	0.003045	0.032810	0.9739
D6	-0.000186	0.002924	-0.063654	0.9495
D7	0.001097	0.002652	0.413807	0.6806
D8	-0.000840	0.002572	-0.326547	0.7452
D9	-0.000292	0.002427	-0.120427	0.9046
D10	0.002313	0.002243	1.031340	0.3068
D11	0.002636	0.002155	1.223062	0.2264
R-squared	0.577931	Mean dependent var		0.005794
Adjusted R-squared	0.464877	S.D. dependent var		0.005780
S.E. of regression	0.004228	Akaike info criterion		-7.900926
Sum squared resid	0.001001	Schwarz criterion		-7.395000
Log likelihood	300.4333	Hannan-Quinn criter.		-7.699515
F-statistic	5.111988	Durbin-Watson stat		1.602220
Prob(F-statistic)	0.000003			

Table 3b: Estimation output for audit quality model

Dependent Variable: /ABLLP/
Method: Least Squares
Sample: 1 72
Included observations: 72

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.020648	0.008152	2.532824	0.0139
LOGFEE	0.001555	0.000908	1.712057	0.0920
ABFEE	-0.004519	0.004416	-1.023360	0.3102
POSABFEE	0.000631	0.000903	0.698629	0.4874
ABFEE*POSABFEE	0.002661	0.005946	0.447568	0.6561
LOGASSET	-0.001519	0.000470	-3.233152	0.0020
CATA	-0.036432	0.010478	-3.476959	0.0009
EBTP	0.069462	0.029420	2.361012	0.0214
REVCH	-0.006163	0.001932	-3.190156	0.0022
PLLP	-0.007242	0.037569	-0.192771	0.8478
BIG	-0.000181	0.000783	-0.230750	0.8183
R-squared	0.275436	Mean dependent var		0.002630
Adjusted R-squared	0.156655	S.D. dependent var		0.002295

S.E. of regression	0.002107	Akaike info criterion	-9.347167
Sum squared resid	0.000271	Schwarz criterion	-8.999343
Log likelihood	347.4980	Hannan-Quinn criter.	-9.208698
F-statistic	2.318852	Durbin-Watson stat	2.112505
Prob(F-statistic)	0.021891		

Table 3a: Coefficient equality test for the audit fee model

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	4.505532	(7, 53)	0.0005
Chi-square	31.53872	7	0.0000

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(12) - C(19)	-0.377263	0.353059
C(13) - C(19)	-0.262379	0.369233
C(14) - C(19)	-0.267945	0.369202
C(15) - C(19)	-0.533507	0.351205
C(16) - C(19)	-0.894386	0.434706
C(17) - C(19)	0.083804	0.372240
C(18) - C(19)	-1.257827	0.463240

Restrictions are linear in coefficients.

Table 4a: Redundant Fixed test for the audit fee model

Redundant Fixed Effects Tests

Test cross-section and period fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.984051	(7,45)	0.0018
Cross-section Chi-square	34.723182	7	0.0000
Period F	2.182313	(8,45)	0.0470
Period Chi-square	23.604473	8	0.0027
Cross-Section/Period F	3.641713	(15,45)	0.0004
Cross-Section/Period Chi-square	57.222552	15	0.0000

Cross-section fixed effects test equation:

Dependent Variable: LOG(FEE)

Method: Panel Least Squares

Sample: 2004 2012

Periods included: 9

Cross-sections included: 8

Total panel (balanced) observations: 72

White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.201935	1.738181	-0.116176	0.9080
LOGASSET	0.431897	0.063380	6.814373	0.0000
LQ	-2.000385	0.343474	-5.823977	0.0000
TRANSACT	0.166327	0.270279	0.615388	0.5410
EFFI	3.173509	0.680271	4.665068	0.0000
ROA	18.25308	5.817148	3.137805	0.0028
LGR	0.246862	0.226270	1.091004	0.2803
NPLR	-1.927563	1.054113	-1.828610	0.0732
CHFR	-0.162922	0.116689	-1.396206	0.1686
CAR	1.060682	0.864462	1.226986	0.2254
BIG	0.320168	0.081640	3.921730	0.0003
COMMLN	0.345416	0.149802	2.305825	0.0251

Effects Specification

Period fixed (dummy variables)

R-squared	0.853737	Mean dependent var	11.60750
Adjusted R-squared	0.800295	S.D. dependent var	0.548773
S.E. of regression	0.245237	Akaike info criterion	0.256952
Sum squared resid	3.127349	Schwarz criterion	0.889360
Log likelihood	10.74972	Hannan-Quinn criter.	0.508715
F-statistic	15.97500	Durbin-Watson stat	0.883781
Prob(F-statistic)	0.000000		

Period fixed effects test equation:

Dependent Variable: LOG(FEE)

Method: Panel Least Squares

Sample: 2004 2012

Periods included: 9

Cross-sections included: 8

Total panel (balanced) observations: 72

White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.079678	1.857251	-2.196621	0.0324
LOGASSET	0.513459	0.068132	7.536285	0.0000
LQ	-1.634746	0.402419	-4.062300	0.0002
TRANSACT	2.675280	0.860541	3.108834	0.0030
EFFI	3.831270	0.758414	5.051688	0.0000
ROA	24.75824	6.406722	3.864417	0.0003
LGR	0.272304	0.219949	1.238036	0.2212
NPLR	-2.309221	0.648322	-3.561842	0.0008
CHFR	0.032179	0.106397	0.302444	0.7635
CAR	1.894061	0.665229	2.847233	0.0063
BIG	0.648157	0.108586	5.969085	0.0000
COMMLN	0.538776	0.351517	1.532718	0.1313

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.874667	Mean dependent var	11.60750
Adjusted R-squared	0.832101	S.D. dependent var	0.548773
S.E. of regression	0.224862	Akaike info criterion	0.074748
Sum squared resid	2.679846	Schwarz criterion	0.675535
Log likelihood	16.30907	Hannan-Quinn criter.	0.313923
F-statistic	20.54847	Durbin-Watson stat	1.596049
Prob(F-statistic)	0.000000		

Cross-section and period fixed effects test equation:

Dependent Variable: LOGFEE

Method: Panel Least Squares

Sample: 2004 2012

Periods included: 9

Cross-sections included: 8

Total panel (balanced) observations: 72

White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.055191	1.728220	-1.189195	0.2390
LOGASSET	0.497460	0.053032	9.380391	0.0000
LQ	-1.770504	0.402534	-4.398393	0.0000
TRANSACT	-0.069515	0.360400	-0.192883	0.8477
EFFI	3.661604	0.878451	4.168253	0.0001
ROA	22.06735	8.159463	2.704510	0.0089
LGR	-0.080929	0.210600	-0.384280	0.7021
NPLR	-2.533678	0.696878	-3.635755	0.0006
CHFR	-0.040682	0.159503	-0.255052	0.7996
CAR	1.520894	0.848374	1.792717	0.0781
BIG	0.370802	0.100050	3.706176	0.0005
COMMLN	0.296669	0.108320	2.738834	0.0081

R-squared	0.800085	Mean dependent var	11.60750
Adjusted R-squared	0.763433	S.D. dependent var	0.548773
S.E. of regression	0.266913	Akaike info criterion	0.347221
Sum squared resid	4.274542	Schwarz criterion	0.726666
Log likelihood	-0.499966	Hannan-Quinn criter.	0.498279
F-statistic	21.82972	Durbin-Watson stat	0.944090
Prob(F-statistic)	0.000000		

Table 5a: Serial correlation test for the audit fee model

The residuals of the audit fee model regressed by its first lag

Test equation= Residual Residuals(-1)

Dependent Variable: RESIDUALS
Method: Panel Least Squares
Sample (adjusted): 2005 2012
Periods included: 8
Cross-sections included: 8
Total panel (balanced) observations: 64

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	0.136493	0.125645	1.086336	0.2815
R-squared	0.018388	Mean dependent var		-1.50E-17
Adjusted R-squared	0.018388	S.D. dependent var		0.162281
S.E. of regression	0.160782	Akaike info criterion		-0.802034
Sum squared resid	1.628602	Schwarz criterion		-0.768301
Log likelihood	26.66509	Hannan-Quinn criter.		-0.788745
Durbin-Watson stat	1.893845			

Table 5b: Serial correlation test for the audit fee model

The residuals of the audit fee model regressed by its second lag

Test equation= Residual Residuals(-2)

Dependent Variable: RESID01
Method: Panel Least Squares
Sample (adjusted): 2006 2012
Periods included: 7
Cross-sections included: 8
Total panel (balanced) observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-2)	-0.227431	0.123323	-1.844189	0.0705
R-squared	0.058236	Mean dependent var		-1.91E-17
Adjusted R-squared	0.058236	S.D. dependent var		0.159028
S.E. of regression	0.154328	Akaike info criterion		-0.881780
Sum squared resid	1.309939	Schwarz criterion		-0.845613
Log likelihood	25.68984	Hannan-Quinn criter.		-0.867758
Durbin-Watson stat	1.685414			

Table 6a: Heteroskedasticity test for LLP Model

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.400426	Prob. F(15,56)	0.1795
Obs*R-squared	19.64071	Prob. Chi-Square(15)	0.1862
Scaled explained SS	17.73770	Prob. Chi-Square(15)	0.2767

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Sample: 1 72

Included observations: 72

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.62E-05	1.66E-05	-1.578034	0.1202
BLLA	-0.000457	0.000393	-1.163346	0.2496
CHNPL	-0.000207	0.000272	-0.762825	0.4488
CHLOAN	-8.95E-05	6.94E-05	-1.290013	0.2023
CHOFF	0.001050	0.000888	1.182709	0.2419
LOAN	0.000104	3.73E-05	2.795732	0.0071
BNPL	0.000264	0.000232	1.137251	0.2603
PRIV	-1.37E-05	1.11E-05	-1.228546	0.2244
D4	-3.04E-05	1.81E-05	-1.679347	0.0987
D5	-1.73E-06	1.67E-05	-0.103685	0.9178
D6	-6.55E-06	1.61E-05	-0.407609	0.6851
D7	-1.46E-05	1.46E-05	-1.002717	0.3203
D8	-1.15E-05	1.41E-05	-0.811932	0.4203
D9	-8.29E-06	1.33E-05	-0.621473	0.5368
D10	-1.08E-05	1.23E-05	-0.877174	0.3841
D11	-1.93E-06	1.18E-05	-0.163253	0.8709

R-squared	0.272788	Mean dependent var	1.39E-05
Adjusted R-squared	0.077999	S.D. dependent var	2.42E-05
S.E. of regression	2.32E-05	Akaike info criterion	-18.30885
Sum squared resid	3.02E-08	Schwarz criterion	-17.80292
Log likelihood	675.1184	Hannan-Quinn criter.	-18.10744
F-statistic	1.400426	Durbin-Watson stat	2.277226
Prob(F-statistic)	0.179479		

Table 7a: Serial correlation test for Loan Loss Provision

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.950155	Prob. F(2,54)	0.1521
Obs*R-squared	4.850100	Prob. Chi-Square(2)	0.0885

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 10/28/13 Time: 14:13

Sample: 1 72

Included observations: 72

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000869	0.003024	0.287459	0.7749

BLLA	-0.019840	0.071027	-0.279328	0.7811
CHNPL	-0.035031	0.053363	-0.656463	0.5143
CHLOAN	-0.008481	0.013135	-0.645661	0.5212
CHOFF	-0.085201	0.165029	-0.516276	0.6078
LOAN	0.003430	0.006909	0.496407	0.6216
BNPL	-0.023314	0.043246	-0.539093	0.5920
PRIV	-0.000742	0.002030	-0.365658	0.7160
D4	0.001302	0.003312	0.393010	0.6959
D5	0.001709	0.003119	0.547989	0.5860
D6	0.001217	0.002948	0.412773	0.6814
D7	0.000504	0.002623	0.192012	0.8485
D8	0.000604	0.002548	0.237092	0.8135
D9	5.72E-05	0.002388	0.023934	0.9810
D10	-0.000130	0.002217	-0.058427	0.9536
D11	-0.000203	0.002123	-0.095717	0.9241
RESID(-1)	0.239664	0.152259	1.574060	0.1213
RESID(-2)	0.154505	0.146807	1.052437	0.2973
R-squared	0.067363	Mean dependent var	2.52E-18	
Adjusted R-squared	-0.226246	S.D. dependent var	0.003755	
S.E. of regression	0.004158	Akaike info criterion	-7.915109	
Sum squared resid	0.000934	Schwarz criterion	-7.345942	
Log likelihood	302.9439	Hannan-Quinn criter.	-7.688522	
F-statistic	0.229430	Durbin-Watson stat	1.931165	
Prob(F-statistic)	0.999196			

Table 8a: Heteroskedasticity test for audit quality model

Heteroskedasticity Test: White

F-statistic	1.016126	Prob. F(59,12)	0.5255
Obs*R-squared	59.99190	Prob. Chi-Square(59)	0.4395
Scaled explained SS	47.68001	Prob. Chi-Square(59)	0.8543

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 10/28/13 Time: 16:20

Sample: 1 72

Included observations: 72

Collinear test regressors dropped from specification

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000742	0.001754	-0.423141	0.6797
LOG(FEE)	0.000742	0.000515	1.439082	0.1757
(LOG(FEE))^2	-4.39E-05	1.78E-05	-2.465895	0.0297
(LOG(FEE))*ABFEE	-3.81E-06	0.000165	-0.023046	0.9820
(LOG(FEE))*POSABFEE	2.39E-05	3.84E-05	0.622744	0.5451
(LOG(FEE))*(ABFEE*POSABFEE)	-0.000214	0.000197	-1.085356	0.2991
(LOG(FEE))*(LOG(ASSET))	1.69E-05	1.50E-05	1.126234	0.2821
(LOG(FEE))*CATA	0.000851	0.000421	2.020416	0.0662

(LOG(FEE))*EBT	0.000503	0.001604	0.313563	0.7592
(LOG(FEE))*REVCH	-2.38E-06	7.42E-05	-0.032116	0.9749
(LOG(FEE))*PLLP	-0.003922	0.001601	-2.450581	0.0306
(LOG(FEE))*BIG	-0.000159	0.000272	-0.585718	0.5689
ABFEE	-0.000608	0.001068	-0.569104	0.5798
ABFEE^2	-0.000160	0.000341	-0.469018	0.6475
ABFEE*POSABFEE	0.000144	0.001929	0.074696	0.9417
ABFEE*(ABFEE*POSABFEE)	-0.000464	0.000536	-0.866144	0.4034
ABFEE*(LOG(ASSET))	3.87E-05	0.000101	0.381697	0.7094
ABFEE*CATA	0.001760	0.001915	0.919289	0.3761
ABFEE*EBTP	-0.016293	0.006157	-2.646449	0.0213
ABFEE*REVCH	0.001116	0.000505	2.208231	0.0474
ABFEE*PLLP	0.015098	0.005625	2.684010	0.0199
ABFEE*BIG	-1.93E-05	8.29E-05	-0.232362	0.8202
POSABFEE	-2.95E-05	0.000233	-0.126612	0.9013
POSABFEE*(LOG(ASSET))	-1.81E-05	2.45E-05	-0.739900	0.4736
POSABFEE*CATA	-0.000153	0.000334	-0.459005	0.6544
POSABFEE*EBTP	0.001036	0.000642	1.613984	0.1325
POSABFEE*REVCH	-2.92E-05	6.39E-05	-0.456970	0.6559
POSABFEE*PLLP	-0.002864	0.001284	-2.229545	0.0456
POSABFEE*BIG	0.000132	0.000143	0.924388	0.3735
(ABFEE*POSABFEE)*(LOG(ASSET))	0.000115	0.000136	0.848811	0.4126
(ABFEE*POSABFEE)*CATA	-0.001905	0.002272	-0.838208	0.4183
(ABFEE*POSABFEE)*EBTP	0.020062	0.006927	2.896402	0.0134
(ABFEE*POSABFEE)*REVCH	-0.001259	0.000509	-2.473676	0.0293
(ABFEE*POSABFEE)*PLLP	-0.008187	0.009300	-0.880333	0.3960
(ABFEE*POSABFEE)*BIG	-0.000411	0.000450	-0.912773	0.3793
LOG(ASSET)	-0.000301	0.000216	-1.391143	0.1894
(LOG(ASSET))^2	9.88E-07	5.86E-06	0.168731	0.8688
(LOG(ASSET))*CATA	-0.000443	0.000258	-1.715136	0.1120
(LOG(ASSET))*EBTP	-0.000223	0.000747	-0.298128	0.7707
(LOG(ASSET))*REVCH	3.41E-05	3.70E-05	0.922684	0.3744
(LOG(ASSET))*PLLP	0.001017	0.000601	1.694004	0.1160
(LOG(ASSET))*BIG	8.28E-05	0.000139	0.594420	0.5633
CATA	-1.72E-05	0.003306	-0.005197	0.9959
CATA^2	0.002681	0.003200	0.837736	0.4186
CATA*EBTP	0.002732	0.012253	0.222985	0.8273
CATA*REVCH	0.000367	0.000683	0.537657	0.6006
CATA*PLLP	-0.001619	0.014777	-0.109598	0.9145
CATA*BIG	-0.000846	0.000904	-0.935844	0.3678
EBTP	-0.003579	0.008206	-0.436093	0.6705
EBTP^2	0.010785	0.014798	0.728827	0.4801
EBTP*REVCH	-0.002832	0.001576	-1.796412	0.0976
EBTP*PLLP	0.011580	0.052924	0.218813	0.8305
EBTP*BIG	0.001043	0.001819	0.573570	0.5769
REVCH	-0.000686	0.000460	-1.488865	0.1623
REVCH^2	9.63E-05	6.67E-05	1.444842	0.1741
REVCH*PLLP	0.001743	0.002005	0.869730	0.4015
REVCH*BIG	3.83E-05	0.000107	0.356319	0.7278
PLLP	0.027828	0.018954	1.468169	0.1678
PLLP^2	-0.005830	0.038992	-0.149510	0.8836
PLLP*BIG	-0.005171	0.004310	-1.199787	0.2534
R-squared	0.833221	Mean dependent var	3.76E-06	
Adjusted R-squared	0.013223	S.D. dependent var	5.64E-06	
S.E. of regression	5.60E-06	Akaike info criterion	-21.47271	
Sum squared resid	3.76E-10	Schwarz criterion	-19.57548	
Log likelihood	833.0174	Hannan-Quinn criter.	-20.71742	
F-statistic	1.016126	Durbin-Watson stat	2.613995	
Prob(F-statistic)	0.525545			

Table 8b: Serial correlation test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.353741	Prob. F(2,59)	0.7035
Obs*R-squared	0.853137	Prob. Chi-Square(2)	0.6527

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 10/28/13 Time: 16:24

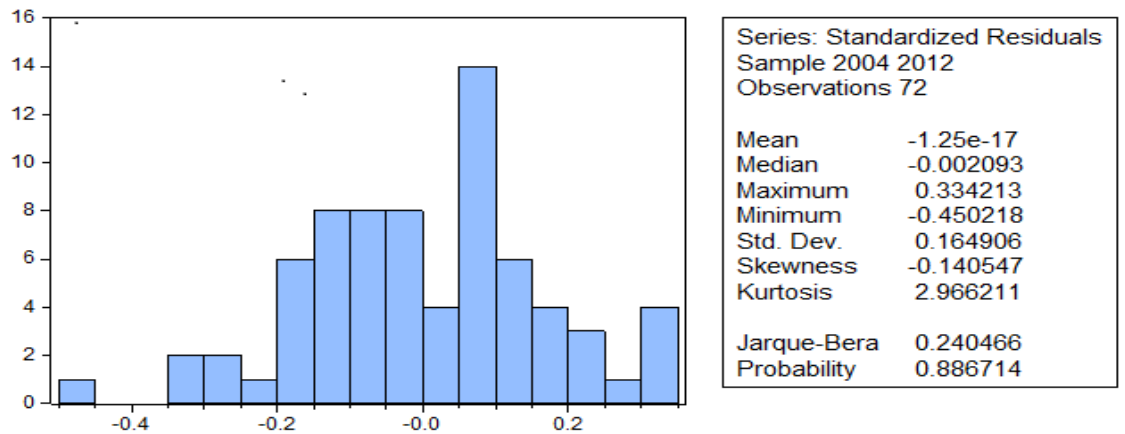
Sample: 1 72

Included observations: 72

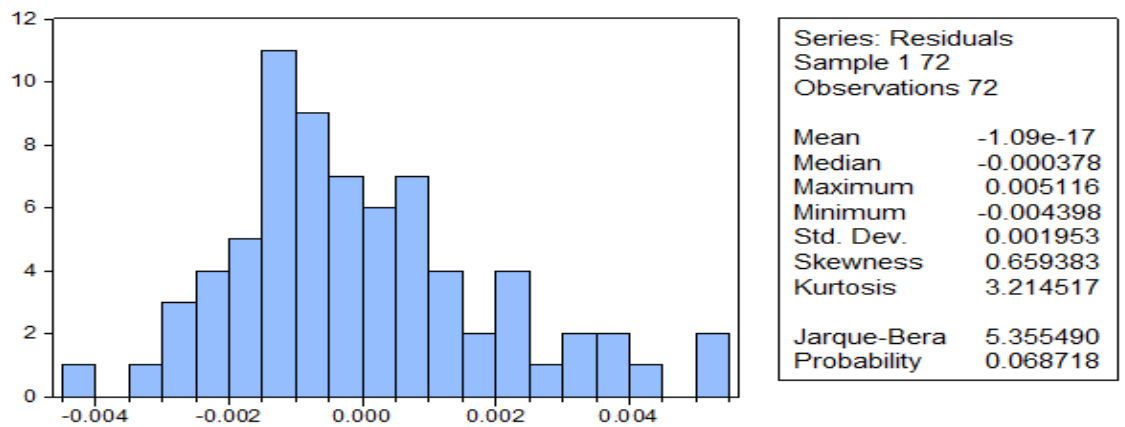
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000526	0.008454	-0.062236	0.9506
LOGFEE	6.66E-05	0.000922	0.072284	0.9426
ABFEE	0.000606	0.004526	0.133995	0.8939
POSABFEE	-0.000138	0.000939	-0.146508	0.8840
ABFEE*POSABFE	-0.000466	0.006047	-0.077018	0.9389
LOGASSET	-3.03E-06	0.000478	-0.006340	0.9950
CATA	-0.000376	0.010617	-0.035383	0.9719
EBTPB	-9.06E-05	0.029773	-0.003043	0.9976
REVCH	0.000167	0.001994	0.083517	0.9337
PLLPL	0.003445	0.039621	0.086943	0.9310
BIG	-0.000142	0.000809	-0.175175	0.8615
RESID(-1)	-0.074713	0.142060	-0.525929	0.6009
RESID(-2)	-0.091791	0.135052	-0.679672	0.4994
R-squared	0.011849	Mean dependent var	-1.09E-17	
Adjusted R-squared	-0.189131	S.D. dependent var	0.001953	
S.E. of regression	0.002130	Akaike info criterion	-9.303532	
Sum squared resid	0.000268	Schwarz criterion	-8.892467	
Log likelihood	347.9271	Hannan-Quinn criter.	-9.139886	
F-statistic	0.058957	Durbin-Watson stat	1.958060	
Prob(F-statistic)	0.999997			

Graph 1a: Normality test for Audit fee model residual



Graph 1b: Normality test for Loan Loss Provision model residual



Graph 1c: Normality test for Audit quality model residuals

