



A Research Project

By Aynalem Kebede

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ADDIS ABABA UNIVERSITY
FACULTY OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING & FINANCE

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**The Effectiveness of Forensic Auditing
THE EFFECTIVENESS OF FORENSIC AUDITING
IN INVESTIGATING, DETECTING AND PREVENTING FRAUD IN THE PUBLIC
ENTITIES OF ETHIOPIA**

A research project

Principal Advisor

Dr. Degefa Duressa, Asso. Professor

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List of Acronyms

ACCA	Association of Certified Chartered Accountant
ACFE	Association of Certified Fraud Examinations
AICPA	Association of Institute of Certified Public Accountants
EACC	Ethics and Anti-Corruption Commission
EFCC	Economic and Financial Crime Commission
PCAOB	Public Company Accounting Oversight Board
ICPC	Independent Corrupt Practices Commission
ISSAI	International Standards of Supreme audit institute
SAI	Supreme Audit Institute
OFAG	Office of the Federal Auditor General
SAS	Statements on Auditing Standards
SEC	Securities and Exchange Commission
SPSS	Statistical Package for Social Science

Abstract

This research aimed at examining the effectiveness of forensic auditing in investigating detecting and preventing fraud in the public enterprise of Ethiopia. Survey method was the principal strategy adhered to in this research. Purposive sampling technique was employed to select samples from the total population of employees working on the Fraud auditing and investigative functions. Primary and secondary data was collected through survey questionnaires and review of related materials. Descriptive statistics, Simple Linear Regression, Pearson's Product Moment Correlation, F-test and t-test are the main tools that were used to test, analyze and interpret the data and hypothesis. Statistical Product and Services Solution (SPSS), formerly known as statistical package for social science was the main instrument utilized. The reliability and validity tests are conducted before the hypothesis test. Result of the research showed that there is a significant relationship between the investigation, detection and prevention of fraud and effectiveness of forensic auditing in the public entities of Ethiopia. It can be concluded from the result of this study that investigation detection and prevention of fraud is significantly affected by effectiveness of forensic auditing. There is also significant and positive relationship between the two variables. Therefore, the government and executives as well as the public at large need to do their at most effort to secure the effectiveness of forensic auditing.



Chapter 1 Introduction

1.1. Overview

Government audit has a significant role in strengthening accountability in the system of controlling and management of the public resource and increases credibility of the financial reports. However, the widespread use of false accounting information, caused big losses for the emerging economies, and these losses have had an impact on the economic development (Hao, 2010). The occurrence include deliberate misrepresentation of the financial condition and results of operations of an enterprise accomplished through the intentional misstatement or omission of amounts or disclosures in the financial statements to mislead financial statement users (Association of Certified Fraud Examiners/ACFE, 2005).

Owing to the use of fraudulent activity, an estimated \$3.5 trillion worldwide were lost in the year 2011 (ACFE). The traditional auditing approach was inefficient to detect these types of financial fraud. In connection to this, different scholars put different reasons of the need for forensic accounting/auditing namely: the traditional accounting/auditing procedures do not contribute to detecting and diagnosing financial fraud, as they focus on the form rather than content and lack of legal and accounting legislation in solving those problems (Renzhou, 2011).

Nowadays, forensic accounting is widely used in different parts of the world to address financial fraud. Forensic auditing can help in exposing and identifying the lawbreakers, through the process of interpreting, summarizing and providing complicated financial issues clearly (Chi-Chi & Ebimobowei, 2012).

Although the demand for and performance of fraud audit is increasing from time to time with an increasing demand for accountability and good governance, the act of fraud is still significant. In this study, forensic accounting is used as an option for addressing financial fraud. Office of the Federal Auditor General is selected for a study on the basis of allocated highest budget/materiality. In this research, forensic accounting is considered as investigative accounting or fraud audit as defined by Dhar and Sarkar (2010).

Objectives of the Office of the Federal Auditor-General regarding forensic auditing According to Falie (1999), the objectives of the office of the auditor-general with forensic auditing include:

- To determine the nature and extent of the perpetration of economic crimes and the adequacy and effectiveness of measures that should have either prevented or detected such crimes;
- To facilitate the investigation of economic crimes in general by providing support to the relevant investigating and/or prosecuting institutions (by handing over cases and providing accounting and auditing skills).

Proactive and reactive techniques have been developed to achieve these objectives. The proactive technique is aimed at preventing economic and financial crimes by promoting an overall fraud awareness culture in the public sector through, inter alia, publications, presentations/workshops, and participation in relevant national and international initiatives (Uzoka, 1990). This is done with the aim of promoting a culture of “zero” tolerance through interventions, such as publishing relevant articles, participating in workshops, seminars, and conferences (which provide developmental learning and networking opportunities), presentation of training programs, providing support to national/international initiatives, and making stakeholders aware of deficiencies in the measures instituted to prevent or detect economic crimes.

The most efficient and effective way to prevent economic crimes is to know the circumstances surrounding them or the conditions that will enhance the possibility of their occurrence. According to Levanti (2001) and Squires (2003), there are circumstances to minimize the risk of economic crimes or fraud occurrence.

1.2. Statement of the problem

Forensic auditing is a new branch which has the sole aim of detection of fraudulent activities within and outside an organization. According to researchers and AICPA SAS No. 99, discovery of financial statement fraud is a rare event. Financial statement fraud can occur in any business environment, sometimes with catastrophic consequences. Financial statement fraud often involves management override. Frequency-of-occurrence information helps auditors understand the nature of financial statement fraud. Contextual information is necessary to determine the probability and existence of financial statement fraud. In most instances, it involves collusion between members of the management team and/or senior management.

Ajje and Ezi (2000), stated that the widespread frauds in modern organizations is because of traditional auditing and investigation was inefficient in the detection and prevention of the various types of frauds. For this reason forensic auditing is developed as an option for addressing financial fraud. In this regard, accounting standard setters have increased the steps auditors are expected to take in order to detect fraud and thereby restore public trust in the audit profession. As a result of the Enron and World Com devastations, auditors are currently required to adhere to the requirements of statement on auditing standards (SAS) No. 99 (Chui and Pike, 2013).

The office of the Federal Auditor General has an objective to undertake a financial, performance, environmental protection, control audit, special audit and other audits

of the offices and organizations of the federal government; to make efforts, in cooperation with concerned organs, to develop and strengthen accounting and audit profession; and to give professional assistance and advice to Regional and Federal Civil servants and organizations engaged in accounting and audit professions. The office has a duty to audit or cause to be audited the accounts of the federal government offices and organizations.

Where the findings of the auditing result indicates that a crime has been committed, the Federal Auditor General shall immediately notify the same to the concerned body. Both audit office and Ethics and Anti-Corruption Commission are established to minimize the increment of fraud to the minimum acceptable level. Despite OFAG and EAACC were working hard to identify and reduce financial fraud, the issue of fraud is still a big deal in the country. This is also shown on the Performance Annual Report of the Office of the Federal Auditor General, which clearly showed that the number of fraud detected per year was increasing significantly in the last two consecutive years.

Investigating corruption is part of forensic auditing/accounting. As it is stated on the site <http://www.ipsnews.net/2013>, in the biggest crackdown on corruption in Ethiopia in the last 10 years, authorities arrested more than 50 high profile people including government officials, businessmen and a prime minister. Ethiopia ranks 113 out of 176 countries on the Corruption Perceptions Index of Transparency International. According to Global Financial Integrity (GFI), whose statistics are based on official data provided by the Ethiopian government, the World Bank, and the International Monetary Fund (IMF), the country has also lost close to 12 billion dollars since 2000 to unlawful financial outflows.

Few findings of Ethics and Anti-Corruption Commission of Ethiopia also depicts that corruption is still a serious problem we are facing. We now witnessing that corruption are occurring dramatically than ever expected. Areas vulnerable to corruption are land administration, tax and revenue, the justice system, telecommunications, procurement, licensing areas and the finance sector etc...

In the year 2006 the commission found the following fraud cases in both budgetary institution and public enterprise.

- ✓ In Semera University there were fraud in relation with procurement of construction service amounting birr 80,000,000.00.
- ✓ In Hawasa University there were fraud in relation with procurement of construction service amounting birr 26,000,000.00.
- ✓ In Ethiopian Construction and Business bank fraud in relation with 99 generator procurement of amounting birr 6,437,222.30.
- ✓ In Hawasa University expansion project in Adama Compass Health Science College there were fraud in relation with procurement of construction service amounting birr 233,303,106.80.
- ✓ In Mekele Water Supply Service there were fraud in relation with procurement of water pipe amounting birr 180,064,390.90.
- ✓ In office of Hawasa Town Water and Sanitary service there were fraud in relation with procurement of water tanker amounting birr 8,884,616.13.
- ✓ In Ethiopia Radio and Television Enterprise there were fraud in relation with procurement of UPS/uninterrupted power supply/ amounting around birr 400,000.00.
- ✓ In Ministry of Trade by taking sample of 30 coffee exporters for five years there were no legal export data for 15 exporters/67,109,601.75 k.g coffee exported. In addition out the total exported coffee 20.8% there was no data

for entrance of the dollar amount (307,659,216.25) to National Bank of Ethiopia account.

According to Ethics and Anti-corruption commission office annual report of 2006E.C. the fraud detected by the commission was total birr 535,089,336.13 and 307,659,216.25. USD.

Hence, to minimize the fraud and enhance development in the country fighting fraud is a mandatory issue. Therefore, this study attempts to assess the effectiveness of forensic auditing in investigating, detecting and preventing fraud in public enterprise of Ethiopia.

1.3. Objective of the Study

1.3.1.General objective

The general objective of the study is to examine the effect of Effectiveness of Forensic Auditing in investigating, detecting and preventing fraud in the case of public enterprise of Ethiopia.

1.3.2.Specific objectives

The above general objective embodies the following specific objectives:

- To study the extent to which effectiveness of forensic auditing affect the investigation, detection and prevention of fraud.
- To study the relationship between the investigation, detection and prevention of fraud and effectiveness of forensic auditing
- To determine if the public entities are aware of the need for introducing forensic auditing,
- To determine the forensic audit effectiveness in strengthening operational efficiency in the organizations.

1.4. Significance of the study

This work is supposed to be important to the Federal Supreme Audit Institution of Ethiopia, to the Federal Ethics and Anti-corruption Commission, to the stakeholders and to the public in general. It is expected that it will help achieve the following core results;

- It would have great importance to the Federal Supreme Audit Institution of Ethiopia, to the Federal Ethics and Anti-corruption Commission to know whether or not Effectiveness of Forensic Auditing in Investigating, Detecting and Preventing Fraud in the case of public enterprises of Ethiopia is in sound condition and to know the areas of weaknesses thereby finding timorous and appropriate measures.
- The research would have offer an insight into the status of Effectiveness of Forensic Auditing in Investigating, Detecting and Preventing Fraud in the public enterprises of Ethiopia.
- It would be used as a source of inspiration for further research and narrows the gap of the literature in this research topic.

1.5. Research questions

The central questions that this research project seeks to answer are:

- Does the effectiveness of forensic auditing affect the investigation, detection and prevention of fraud?
- Is there a significant relationship between the investigation, detection and prevention of fraud and effectiveness of forensic auditing?

1.6. Research hypotheses

Based on the above statement of the problems and objectives of the research, the following hypotheses are formulated to answer the research questions:

H1₀: Effectiveness of forensic auditing does not affect the investigation, detection and prevention of fraud.

H1_A: Effectiveness of forensic auditing affects the investigation, detection and prevention of fraud;

H2₀: There is no significant relationship between the investigation, detection and prevention of fraud and effectiveness of forensic auditing

H2_A: There is a significant relationship between the investigation, detection and prevention of fraud and effectiveness of forensic auditing

1.7. Scope and limitation

For the purpose of this research, the scope was limited to only studying the extent to which effectiveness of forensic auditing affect the investigation, detection and prevention of fraud and the relationship between the two variables (relationship between the investigation, detection and prevention of fraud and effectiveness of forensic auditing). Therefore, it never attempted to cover other interacting elements and factors related to the research topic.

It is not an easy task to conduct a research in Ethiopia for many reasons. The following limitations were attributable to this study.

1. It was very tiresome to get relevant officials and personnel on time. This condition made the researcher to shift the focus of the survey to some extent.
2. Absence of transparency, accountability and monopolistic nature of powers of the high-level officials caused the researcher to reduce some of the survey questionnaire items as some of the intended respondents left the entity.
3. The time and resource constraint as well as getting timely responses for the designed questionnaire posed some impact on this research.

1.8. Variables Identification

The dependent variable was taken to be the Investigation, detection and prevention of Fraud while the independent variable is the Effectiveness of Forensic Auditing.



Chapter 2

Literature Review

2.1. Introduction

In this chapter, literature germane will be critically analyzed to understand Effectiveness of forensic auditing in investigating, detecting and preventing fraud and the level of their relationship.

This section presents the concept of forensic auditing, forensic auditing in a global context, the status of forensic auditing in developing countries, the contribution of forensic auditing in addressing fraud, challenges of implementing forensic auditing in Ethiopia, and the role and practice of forensic auditing in Ethiopia.

2.2. Definition and concept of forensic auditing

Different scholars define the term in different ways. One of the definitions given for it is forensic is a science dealing with the application of accounting facts and concepts gathered through auditing methods, techniques and procedures to resolve legal problems which requires the integration of investigative, accounting, and auditing skills (Arokiasamy & Cristal, 2009; Dhar & Sarkar, 2010).

There are various definitions on forensic auditing. Forensic auditing is recognized as a particular form of professional expertise and endowed with specific attributes; the recognition comes from possessing a formal certification in forensic auditing which provides symbolic value (Williams, 2002). Forensic auditing possess a particular social recognition, observation that is critical to the translation of economic issues into symbolic displays of trust. The critical social value that forensic accountants/auditors possess is the symbolic capacity by which the translation is realized (Williams, 2002).

According to ACCA (2008), forensic accounting/auditing is regarded as a comprehensive understanding of fraud investigation and mainly used to study many different types of fraud. It is useful to categorize these types of fraud into three groups to provide an overview of the wide range of investigations that could be carried out. The three categories of frauds are corruption, asset misappropriation and financial statement fraud.

Zysman (2004) defined forensic accounting as the process to integrate accounting, auditing and investigative skills, while Dhar and Sarkar (2010) define forensic accounting as the application of accounting concepts and techniques to legal problems. As per Dhar and Sarkar (2010), forensic accounting also called investigative accounting or fraud audit. It is a merger of forensic science and accounting. And it has considered that using forensic accounting techniques will help in exposing and identifying the lawbreakers, because this accounting presents the process of interpreting, summarizing and providing complicated financial issues.

Forensic accounting is the specialty area of the accountancy profession which describes engagements that result from actual or anticipated disputes or litigation. “Forensic” means “suitable for use in a court of law,” and it is to that standard and potential outcome that forensic accountants generally have to work (Crumbley, Heitger and Smith, 2005).

More over it is defined as, a science dealing with the application of accounting facts and concepts gathered through auditing methods, techniques and procedures to resolve legal problems which requires the integration of investigative, accounting, and auditing skills (Arokiasamy & Cristal, 2009; Dhar & Sarkar, 2010). Stanbury and Paley-Menzies (2010) state that forensic accounting is the science of gathering and presenting information in a form that will be accepted by

a court of jurisprudence against perpetrators of economic crime. Hopwood, Leiner, and Young (2008) argued that forensic accounting is the application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets standards required by courts of law. Degboro and Olofinsola (2007) noted that forensic investigation is about the determination and establishment of fact in support of legal case.

2.3 Overview of Forensic Auditing

Williams (2002) stated that forensic accounting provides cultural mediation for economic and political logics. It is the venue within which the cultural mediation of legal and economic claims is accomplished. The first decade of the twenty-first century experienced a blizzard in the number of corporate scandals, frauds, and failures (Ball, 2009). These events precipitated and contributed to the Great Recession and significantly impacted the efficient functioning of free market capitalism. Some of which were actually facilitated by public accountants. The scandals, frauds, and failures have contributed to the loss of confidence by the financial statements users in the ability of public accounting to contribute viable solutions to the financial problems, and have fuelled the growth in demand for forensic accountants (Huber, 2012). Forensic accountants have played an increasingly important role in the litigation and other legal disputes fomented by these recent frauds and failures.

Forensic accounting is introduced by Western countries for the first time in the 1980s in line with the developments in the market economy and to support the judicial system. According to Keskin and Ozturk (2013), forensic accounting is defined as a science that differs from traditional accounting in which leads getting accounting facts throughout using procedures and audit method that dealt with legal problems and financial attributes. Hao (2012) believes that the forensic

accounting/auditing is the result of the integration between the legal framework and the accounting framework. The integration of accounting, auditing and investigative skills yields the specialty known as forensic accounting/auditing. Forensic, according to the Webster's Dictionary, means belonging to, used in or suitable to courts of judicature or to public discussion and debate.

According to ACFE forensic auditing may involve the application of special skills in accounting, auditing, finance, quantitative methods, law and research. It also involves quantitative skill to collect, analyze, and evaluate financial evidence, as well as the ability to interpret and communicate findings.

Degboro and Olofinsola (2007) noted that forensic investigation is about the determination and establishment of fact in support of legal case. Furthermore, it is regarded as a comprehensive understanding of fraud investigation and mainly used to study many different types of fraud. It is useful to categorize these types of fraud into three groups to provide an overview of the wide range of investigations that could be carried out. The three categories of frauds are corruption, asset misappropriation and financial statement fraud ACCA (2008). It may involve the application of special skills in accounting, auditing, finance, quantitative methods, law and research. It also involves quantitative skill to collect, analyze, and evaluate financial evidence, as well as the ability to interpret and communicate findings.

It is booming, and continues to expand through the recent global recession. Due to this over a past five year period, the number of fraud examiners certified by the Association of Certified Fraud examiners increased from just over 15,000 to nearly 25,000.

Karwai (2002) reported that the identification of the causes of fraud is very difficult. He stated that modern day organizations frauds usually involve a complex web of conspiracy and deception that often mask the actual cause. Ajie and Ezi

(2000) are of the view that studies have shown that on the average out of every ten (10) staff would look for ways to steal if given the opportunity and thus only could four (4) be normally honest. The widespread frauds in modern organizations have made traditional auditing and investigation inefficient and ineffective in the detection and prevention of the various types of frauds confronting businesses world-wide.

Okoye and Akamobi (2009) commented that forensic accounting is the practice of utilizing accounting, auditing and investigative skills to assist in legal matters. It is a special practice area of accounting that describes engagements that result from actual or anticipated disputes or litigation. It comprises litigation support, investigation and dispute resolution. The increase in number of fraud and fraudulent activities in Ethiopia and around the world has emphasized the need for forensic accountants.

2.4 Global Context of Forensic Auditing

Ajie and Ezi (2000) the widespread of frauds in modern organizations, is because of traditional audit investigation was inefficient and ineffective in the detection and prevention of the various types of frauds confronting businesses world-wide. Due to this the need for forensic accounting/auditing emanated.

In Nigeria, Cadbury Nig Plc whose books were criminally manipulated by management was credited to have lost 15 billion Naira. In the case of the nine collapsed commercial banks in Nigeria, about one trillion naira was reported to have been lost through different financial malpractice. Generally, financial fraud is varied and committed by individuals and institutions.

World Bank Poverty Reduction and Social Development Unit Africa Region (1998) reported that the international community, increasingly concerned with

corruption, has launched a wide range of anti-corruption activities. Defined as the abuse of public office for private gain, corruption can take many forms, but the current concern is with corruption in the public sector or at the interface between public and private sectors. Investigating and sanctioning corrupt practice are critical, but enforcement and punishment will not achieve sustainable results unless accompanied by efforts to correct underlying causes. Fighting systemic corruption should be addressed as part of a broad strategy for improving public sector performance.

Corruption is a serious problem that must be tackled before any meaningful development can take in any country. While poverty is a contributing factor to corruption, endemic corruption enhances and spreads poverty, it is a vicious circle. The Enactment of the Corrupt Practices and other Related Offences Act and the Establishment of the Economic and Financial Crimes Commission are two very important steps by the current administration to arrest the scourge.

In addition to the serious social damage caused by corruption among community members within the scope of everyday life (not least foster a spirit of despair and frustration resulting from the sense of injustice and inequity), the economic effects of corruption is subversive, summarized by Gray, Hellman and Ryterman (2004) as follows:

- A. Reducing growth rates and prevents direct investments.
- B. Reducing and misusing the resources of the state.
- C. Low economic efficiencies and poor distribution of national wealth.
- D. Low efficiency in money investment, and weaken the level of infrastructure quality.
- E. Increasing the external debt and weaken the state's ability to repay its debts.
- F. The high cost of services and capital formation due to the addition of bonuses paid as commission for the corrupter.

The causes of corruption often lie in: policies, which give rise to favoritism, and perverse incentives; a regulatory regime, which imposes excessive burdens on the private sector; and an over-extended government, which cannot adequately reward its civil service. Weak public sector financial management—the mishandling of government procurement, inadequacies in public sector accounting and auditing, and failure to hold public officials accountable for misuse of public resources and deficiencies in the legal/judicial system—are also factors. These factors lead to a breakdown in formal rules governing public and private sector behavior and informal rules take over, with bribery becoming the norm. Corruption flourishes when public officials have monopolistic power over a good or service and the discretion to decide who will receive the good or service and at what price, and when transparency and accountability are weak or absent.

2.5. The contribution of forensic accounting in detecting fraud

The increasing sophistication of financial fraud requires that forensic accounting be added to the tools necessary to bring about the successful investigation and prosecution of those individuals involved in criminal activities.

Forensic accounting can, therefore, be seen as an aspect of accounting that is suitable for legal review and offering the highest level of assurance and increase the effectiveness of forensic accounting in fraud control, improving financial reporting and internal control. It has the sole aim of unearthing fraudulent activities within and outside an organization so far as the third party's action is in any way reflective on the activities of that organization.

Consequently, such a thing will increase both fraud and corruption and lead to have a negative impact on the economy of the country. Fraud could be prevented and limited by using forensic auditing.

Forensic accountants/auditors possess a particular social recognition, observation that is critical to the translation of economic issues into symbolic displays of trust. The critical social value that forensic accountants possess is the symbolic capacity by which the translation is realized (Williams, 2002). According to the Association of Certified Fraud Examinations (ACFE, 2012), an estimated \$3.5 trillion worldwide were lost due to fraudulent financial statements, asset misappropriation, and corruption in 2011. In an effort to restore public trust in the audit profession, accounting standard setters have increased the steps auditors are expected to take in order to detect fraud. As a result of the Enron and World Com debacles, auditors are currently required to adhere to the requirements of Statement on Auditing Standards (SAS) No. 99 (cited in Chui and Pike, 2013).

Cadbury (NiG.) Plc. was involved in an accounting dishonor that saw the over statement of the company's profit by over 13billion Naira between the period 2003 and 2006. The Nigerian Securities and Exchange commission (SEC) investigated the scandal and issued a report. In a similar vein, in 2010, the Nigerian Stock Exchange was accused of conducting the affairs of the exchange in a manner detrimental to the interest of investors. A forensic audit of the exchange was commissioned and an interim report was issued.

2.6. Challenges of implementing forensic auditing in public entities

Ineffective and inefficient system of internal control which is stated by the author points out that a weak management cannot be changed with internal control system. Even if a company applies good internal control systems, the management will still be the major factor influencing the implementation. Companies should look towards new approaches rather than follow the traditional approach as forensic accounting/auditing may be the next best alternative in resolving problems.

Ramaswamy (2005) states that poor corporate governance and accounting failure is one of the reasons why fraud cases emerge. This is because poor corporate governance will lead to the ability of certain individual or a group of people with the same interest to act upon it to commit fraudulent activities in the company. He also states that the problems within the corporate reporting system as a reason because of lack of well implemented policy of corporate governance. This can be reinforced by the fact that top level management should follow the policies of the firm which will help the company to perform better. The problem comes from the fact that certain corporate leaders do not have positive attitude regarding the policies.

Therefore, lack of honesty and transparency in reporting financial statement is another problem. It is agreeable that an auditor does not have the absolute duty to uncover fraud, but they should practice fair and true reporting to ensure that the interests of the public as well as the employees are protected. With the use of forensic accounting guidelines, auditors can act as forensic accountants in cases of suspicious fraud or criminal activities in a company. Farther more forensic accounting is not included in the curricula taught in Iraqi universities as is the case in the universities of the developed countries.

2.7. Circumstances to minimize occurrence of fraud

- Strong financial management systems: The auditor-general is authorized to enquire into the efficiency and effectiveness of internal controls and financial management systems and to report thereon. Management is well informed that, should the measures and systems implemented by them not be adequate to ensure probity and reduce the risk of economic crimes, they will be held accountable through the office's reports to the relevant legislative bodies;

- Effective internal controls: In determining the scope and extent of the audit, in terms of the Generally Accepted Government Auditing Standards, the auditor-general is compelled to study and evaluate the reliability of internal controls, which could include organization of work, segregation of duties, physical security measures, authorization and approval, arithmetical and accounting procedures, effective training of staff, supervision, and management. The fact that the auditor-general, in its audit approach, conducts procedures to evaluate the effectiveness and reliability of the relevant institution's internal controls and to report thereon, serves as a very definite deterrent for potential perpetrators of economic and financial crimes;

- Adequate public awareness (and acceptable standards of conduct): The results of the auditor-general's findings are made available to all the relevant legislative bodies at all government levels, at least annually.

These findings become public knowledge once the audit reports have been tabled and the general public has access to them. There is a disclosure policy entailing the issue of media releases on the findings of the audit to provide additional public awareness. This public disclosure of audit findings serves as another deterrent to economic crimes.

According to Ansari (2005), the reactive technique focuses on the investigation of allegations of economic and financial crimes. The submitted allegations are confirmed or refuted by collecting and submitting substantive evidence. The objective would be to investigate and report on: (1) the nature and extent of the specific instance of economic and financial crimes; (2) the suspects involved; (3) deficiencies in the measures that should have prevented or detected the crimes; (4) recommending punitive steps and further actions in respect of: (a) criminal prosecution; (b) criminal recovery; and/or (c) disciplinary action; and (5) progress made by other institutions in investigating relevant cases.

Findings are then reported on through the normal audit process, or when applicable, are handed over to institutions with investigating and prosecuting powers, such as the Economic and Financial Crime Commission (EFCC) and Independent Corrupt Practices Commission (ICPC).

The auditor-general has developed several strategies to address economic and financial crimes, which are being implemented on the following principles:

- Firstly, the auditor-general as the external auditor of state institutions is not responsible for the prevention and detection of economic crimes in the public sector, since this is the ultimate responsibility of management (accounting officers);
- Secondly, the principle or understanding on which the auditor-general bases his strategies is the acknowledgement of the roles played by other institutions in the prevention, detection, and investigation of economic crimes. Where possible, these institutions are supported by, inter alia, providing assistance and cooperation. The assistance and cooperation among these role players are indeed to be taken up in a formal agreement;
- Thirdly, the principle or understanding on which the auditor-general bases his strategies is that of playing an active role in supporting existing initiatives and programs that aim to combat economic crimes.

2.8. Functions of Forensic Auditing

Albrecht et al. (2001) identified the following key functions of forensic auditing:

(1) to carry out the vision and mission of forensic audit to prevent, detect, and investigate issues of fraud and financial abuse within an organization/entity; (2) identification of causative factors and collection of facts for individual investigations by leading the evaluation of internal control weaknesses that allow unethical business behaviors and practices to occur and go undetected; (3) lead internal and external resources in an effort to address allegations of fraud raised

within the system; (4) provision of help in the development of fraud awareness training and analyze fraud trends and internal control procedures; (5) perform a comprehensive analysis of investigation results across the enterprise to identify pervasive control issues; (6) oversee the investigations, planning, and forensic report writing process for forensic audits, and investigations and presentation of findings through reports and exhibits; (7) work closely with financial training function to enhance fraud-auditing skills; (8) develop the fraud prevention, detection, and investigation program and management of company's Fraud Risk Assessment program; (9) conduct activities in areas of moderate to high risk; (10) conduct complex and extremely sensitive investigations; (11) promote education and awareness on fraud risk management throughout the bank; and (12) testifying in court as an expert witness (Girling, 1997).

2.9. Auditor's responsibility in detecting fraud

Many readers of financial statements believe that auditors are ultimately responsible for the financial statements or at least that they have a responsibility to detect all errors, fraud, and illegal acts (Messier, Glover & Prawitt, 2008). The financial statements are the responsibility of management (note that the assertions are called management assertions); the auditor's responsibility is to express an opinion that provides reasonable assurance on the fairness of the financial statements. According to Messier, Glover and Prawitt, the auditor has a responsibility to:

Plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error or fraud. Because of the nature of audit evidence and the characteristics of fraud, the auditor is able to obtain reasonable, but not absolute, assurance that material misstatements are detected. The auditor has no responsibility to plan and perform the audit to obtain reasonable assurance that misstatements, whether caused by

errors or fraud, that are not material to the financial statements will be detected(Messier, Glover & Prawitt,2008:47).

Recently, the accounting profession directly addressed the external auditor's responsibility to detect financial statement fraud in its Statement on Auditing Standards (SAS) No. 99, titled "Consideration of Fraud in a Financial Statement Audit." SAS No. 99 requires independent auditors to obtain information to identify financial statement fraud risks, assess those risks while taking into account the entity's programs and controls, and respond to the results of this assessment by modifying their audit plan and programs.



Chapter 3

Research Methodology

3.1. Research type

This is a survey type research. It involved the use of theory and deductive approach, in which a research strategy was designed to test the hypothesis after theory and hypotheses are developed than the inductive approach, in which the researcher would collect data and develop theory as a result of his data analysis. The deductive approach is chosen for this research as it is more suitable for the type of data in this research.

3.2. Research methods

3.2.1. Method of sampling

Purposive sampling was employed in this research. Purposive or judgmental method is suitable for this research as a probabilistic or random sampling method is not suitable for the research objective.

3.2.2. Target population, sample size & respondents

Office of the Federal Auditors General and Anti-Corruption commission are selected purposively on the basis of their relevance for the study. Out of 200 employees working under the Fraud auditing and investigative functions in the OFAG and EAACC, 26 respondents were chosen to be participated in the survey. Thus, target population is 200 and sample size is 26.

3.3. Research design

3.3.1. Data types, sources & collection methods

Data to be collected and utilized in this study was a combination of qualitative and quantitative type from primary and secondary sources. The primary data was obtained from the respondents through a well-structured Likert type survey questionnaire presented by a five point scale of 5-strongly agree, 4-agree, 3-neutral, 2-disagree and 1-strongly disagree. Secondary data was obtained mainly from reports, journals, institutional publications and textbooks. The result of the questionnaire was collated with data collected from secondary sources for further processing and analysis to draw concluding inferences.

3.3.2. Data analysis & interpretation

Simple Linear Regression/Correlation and descriptive statistic were the basic methodology of analyzing and presenting the data and hypotheses testing. Test of validity and reliability was conducted before the survey data were run for analysis. All tests and analysis were done using Statistical Product and Services Solution version 20. Excel software was also utilized to transform the data into format suitable for the SPSS analysis.

Bivariate regressions were done on the dependent and independent variables and were analyzed by applying the following simple linear regression equation:

$$Y = a + bX + c$$

Where:

Y = Investigation, detection and prevention of Fraud

a = Constant, which is the value of Y when b = 0

b = coefficients of regression

X= Effectiveness of Forensic Auditing

c = error term or residual value.

3.4. Test of Hypotheses

The hypotheses test in this study was conducted using the F-test and t-test with the help of SPSS and/or using the following formula:

Where:

$$t = \frac{b_j}{S_{b_j}}$$

t = value that is resulted from the calculation

b_j = coefficient of regression;

S_{b_j}= standard error of regression coefficient.

Two alternatives to determine the accept-reject decision:

Either

a) Comparison of the realization of the test statistic (t-value) with the appropriate critical value. If the distance of the data from H_0 is greater than the distance given by the critical value, then we reject H_0 . Or

b) Calculation of the p-value of a test. This is a measure of the credibility of H_0 (it is not the probability that H_0 is true). If $p < \alpha$ (the significance level), then we reject H_0 . More precisely, if

1. $p < 0:05$, there is evidence against H_0 .
2. $p < 0:01$, there is strong evidence against H_0 .
3. $p < 0:001$, there is very strong evidence against H_0 .

For probability value (p-value) and critical value of T-statistic see Table on the appendix. T-statistic follows a t-distribution with $n - p$ degrees of freedom.

$H_0: b \leq 0$ (Effectiveness of forensic auditing does not affect the investigation, detection and prevention of fraud);

$H_A: b > 0$ (Effectiveness of forensic auditing affect the investigation, detection and prevention of fraud). Therefore, in this study:

Accept H_0 if t-statistic < critical value (theoretical value or table value)

Reject H_0 &/or accept H_A if t-statistic > critical value.



Chapter 4

Results and Discussions

4. Descriptive statistics of demographic analysis

4.1. Finding of Reliability and Validity Testing

Validity and reliability testing of the effectiveness of forensic auditing and the fraud investigation, detection and prevention was measured based on 50 survey questionnaire items. The result of Cronbach's alpha indicate 0.639 which is more than 0.6 indicating that they are reliable to the acceptable level to measure consistently what we intended to measure.

In terms of validity, result of Pearson's Product moment Correlation Coefficient showed **0.511** while the critical value (theoretical value from Pearson's table at $N=26$, alpha of 0.05 (2-tailed)) is **0.388**. $0.511 > 0.388$ indicates that the items are valid.

4.2. Finding of regression analysis

This section of the study has been mapped out to aid the presentation and discussion of empirical results. As it were, the study attempted to examine empirically the impact of effectiveness of forensic auditing on fraud investigation, detection and prevention.

The aim of regression analysis is to estimate the effect or impact of a given independent variable on variation in the dependent variable. In the case of multiple regressions, we control for all the other independent variables in the model.

Table 1. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.785 ^a	.616	.600	2.86789	1.435

a. Predictors: (Constant), EFFECTIVENESS OF FORENSIC AUDITING

b. Dependent Variable: INVESTIGATION, DETECTION & PREVENTION OF FRAUD

As can be seen from the above table:

R^2 was 61.6% and adjusted R^2 was 60%, which reflects that about 60% of the variations in the dependent variable (the Investigation, detection and prevention of fraud) is explained by the independent variable (Effectiveness of forensic auditing).

Durbin-Watson statistic (which is 1.435) indicates that there is no autocorrelation in the dependent variable, since it is so close from the optimal value (2).

Table 2. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Co linearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	13.838	9.245		1.497	.147	-5.243	32.918		
EFFECTIVENESS OF FORENSIC AUDITING	.703	.113	.785	6.203	.000	.469	.937	1.000	1.000

a. Dependent Variable: INVESTIGATION, DETECTION & PREVENTION OF FRAUD

Output of variance inflation factor (VIF) column in the above table shows that VIF there is no problem of multi-co-linearity between items of the independent variable, (effectiveness of forensic auditing) as VIF value of 1.000 [and also tolerance 1.000] is less than 2 which is the acceptable level.

From this table we can fill the coefficient of regression as follows.

$$Y = 13.838 + 0.703X + e$$

Adding the value of e (i.e residual) from the ANOVA output table, the overall regression equation would be:

$$Y = 13.838 + 0.703X + 197.395$$

4.3. Result of Goodness of fit test

The last two columns in the following table (ANOVA-table) shows the goodness of fit of the model. It is p-value or observed significance of the F. *The lower this number, the better the fit.* Typically, if “Sig” is greater than 0.05, we conclude that our model could not fit the data.

Table 3. ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	316.451	1	316.451	38.475	.000 ^b
Residual	197.395	24	8.225		
Total	513.846	25			

a. Dependent Variable: INVESTIGATION, DETECTION & PREVENTION OF FRAUD

b. Predictors: (Constant), EFFECTIVENESS OF FORENSIC AUDITING

1. F-statistic **38.475** > **4.303** (critical value from t-table) and
2. The probability (p-value or the Sig. value) $0.000 < 0.05$ (alpha).
3. R^2 , **0.616** > 0. As this value gets approach to +1, the better the model will be. All the three testing criteria are fulfilled. Therefore it is reasonable to conclude that ***the model is fit.*** (Goodness-of fit is significant)

4.4. Result of Hypotheses test

4.4.1. 1st Hypotheses test

H1₀ would be rejected and **H1_A** accepted if t-statistic is higher than critical value.

The value of t-statistic for the variable 0.785 is higher than critical value 0.311, and p-value of 0.000 is smaller than alpha (0.05). It means that the investigation, detection and prevention of fraud is significantly determined by the effectiveness of forensic auditing. Hence we reject the null hypothesis which states that Effectiveness of forensic auditing does not affect the investigation, detection and prevention of fraud and support the alternative hypothesis.

4.4.2. 2nd Hypotheses test

H_{20} would be rejected and H_{2A} accepted if t-statistic is higher than critical value.

In order to verify the significance of the relationship between the two variables, Pearson's correlation coefficient was determined through Pearson's (t) distribution, and the results showed that the correlation coefficient between the two variables (0.711) is greater than the critical value 0.311 (from Pearson's correlation table).

Conclusion and Recommendation

On the basis of the analysis and finding, it is now reasonable to conclude that effectiveness of forensic auditing provide firms with the necessary tools to investigate detect and deter fraudulent activities but does not curb fraudulent activities.

The gap can be filled by introducing and adapting forensic auditing as financial strategy to curb economic and financial crimes:

- Forensic auditing will provide litigation support service with appropriate provision of professional services in the law courts.
- Forensic Accounting will institute good corporate governance in the public sector which will install public confidence in the government and the entire system.

- The traditional auditing has limitation in detecting fraudulent practices which the forensic accountants will effectively fill. They have the professional ability back up by law to break into the organization system and examine the books, make discoveries and present the documentary evidences in the law courts.
- Failure to tighten the effectiveness of forensic auditing could impair the image of Ethiopia in the international community may discourage foreign direct investment because of economic and financial crime. This has effect on development, employment and the standard of living of the people.
- Eradication of economic and financial crime through the adoption of effective forensic auditing/accounting in the system will improve the image of firms under review.
- Detection and prevention of corruption have given rise to the profession of forensic auditing/accounting. Due to this fact, the most important thing companies have to do with regard to fraud is to prevent the crime from being committed.
- Government and regulatory authorities should ensure the provision of standards and guidelines to regulate forensic activities and above all Ethiopian citizens should embrace integrity, objectivity, fairness and accountability in their day-to-day activities.

List of Tables

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Table 4. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
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EFFECTIVENESS OF FORENSIC AUDITING	.703	.113	.785	6.203	.000	.469	.937	1.000	1.000

a. Dependent Variable: INVESTIGATION, DETECTION & PREVENTION OF FRAUD

Table 5. Pearson's Correlations

		EFFECTIVENESS OF FORENSIC AUDITING	INVESTIGATION, DETECTION & PREVENTION OF FRAUD
EFFECTIVENESS OF FORENSIC AUDITING	Pearson Correlation	1	.785**
	Sig. (2-tailed)		.000
	N	26	26
INVESTIGATION, DETECTION & PREVENTION OF FRAUD	Pearson Correlation	.785**	1
	Sig. (2-tailed)	.000	
	N	26	26

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6. Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	180.194 ^a	144	.022
Likelihood Ratio	96.600	144	.999
Linear-by-Linear Association	15.396	1	.000
N of Valid Cases	26		

a. 169 cells (100.0%) have expected count less than 5. The minimum expected count is 04.

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