



FORENSIC ACCOUNTING: AN EMPIRICAL STUDY OF BANKING INDUSTRY

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ABSTRACT

The work examined the effect of forensic investigation methods in corporate fraud deterrence in Indian banks. The study adopted a survey research design and data from primary source were collected through interviews and administration of questionnaires, while secondary source consists of reports on fraud and forgery in the banking sector. Statistical tools used to analyze the data include percentages, mean score, frequency tables, regression analysis and Z-test. Three hypotheses were formulated and tested. The result revealed that there is a significant relationship between the forensic investigative methods and corporate fraud deterrence. The finding also revealed that expert services of forensic investigators are normally required in the prosecution of fraud, but majority of the audit and accounting personnel in India are suffering from miserable perception and knowledge of forensic investigative methods. Thus, a suggestion was made by the study to adopt forensic investigative methods in our professional literature vide International Financial Reporting Standards (IFRS). The study contributes to the limited existing literature on the forensic auditing where little work study has been done in India. There is a need for improvement in accounting curriculum, since there is a failure of

accounting and control methods that lies in the methodology taught in universities to discover financial fraud cases.

Keywords: Forensics, investigative methods, corporate fraud deterrence.

Introduction

Forensic accounting has become very important issue by researchers and scholars in recent years in several countries in the world today. The need for forensic accountants arose because of the failure of audit system in the organizations as the organizational internal and external audit fail to discover certain errors in the managerial system. More and more forensic accountants are being called up to meticulously search through documents, discover new information and help in putting together the irregular pieces of company's financial puzzle to solve the vexing problems.

The growth in forensic accounting can be attributed to the following:

- (a) Internal audit and audit committee as part of the management function could not throw light on the different fact and other hidden aspects of corporate fraud.
- (b) Rotation of statutory auditor touches aspect of the problem, while it reduces emphasis but it adversely needs longer duration. The method of appointing the statutory auditor used is not fool-proof as it broods collusion and lobbying.
- (c) The certificates of the auditors are hardly scrutinized carefully, especially when the reports are unclean and qualified.
- (d) The internal auditors can surely detect what was happening but they are hardly in a position to initiate proper action in proper time.

Auditors can no longer choose to ignore the use of new technology, because they simply cannot perform their function without understanding how their client is using such new technology to run the business. The financial audit therefore will change significantly as business changes, because of the use of modern technologies such as networking, client/server, forensic science and real-time systems. There is need for a new education and specialization to deepen the skills of auditors and a strengthening of the audit department or firm with relevant tools of the trade.

Many organizations in their attempt to improve their image have resorted to appreciating the services rendered by forensic investigator, at the wake of the latest global financial crisis that led to the collapse of multi-national corporations such as WorldCom and failure of some banks in India coupled with high level of allegations and actual cases of corporate fraud.

In view of the above development, this study is set out to investigate the impact of forensic investigative methods on corporate fraud deterrence in banks in India.

The need for forensic accounting is as a result of pervasive increase in deviant behaviour, resulting in higher crime rates: obtuse, irresponsible, opaque laws and regulations with loopholes that the unscrupulous exploits, and regulations that create monopoly of decisions in the hands of the bureaucrats. The get rich quick mentality has ruined businesses and corporations. Fraudulent financial practices, misappropriations of assets, money laundering, and manipulation of the figures reported in the financial statements have been the order of the day. Bribery and corruption are regarded as norm in every sector that authorities no longer frown at them.

As a result of advancement in technology, fraud has become so sophisticated that it is no longer something the independent internal and external audit can guide with their periodic audits. The problem of this study therefore, lies in the prevalence of financial and corporate fraud and the control methods. The perceived failure of audit to fully alert equity and other stakeholders concerning misrepresentations in financial position and to sufficiently report accurate operational earnings, has made investors helpless and unable to undertake rational financial decisions affecting companies generally. In view of the above, the growing number of financial scandals and frauds in recent years has placed forensic accounting topmost in the emergent areas in accounting, a most secure career path and a comfortably nascent domain for accountants. Thus, the researcher was interested in investigating the effect of forensic investigative methods on corporate fraud deterrence in Indian banks.

Objectives of the Study

The major objective of the study is to determine the effectiveness of forensic investigative methods on corporate fraud deterrence in banks in India. Other specific objectives include the following:

- (a) To examine the role of forensic investigative methods in fraud detection and prevention in banking industry.
- (b) To investigate the differences between the forensic investigative techniques and procedures and that of independent internal and external audits.

Research Questions

1. To what extent do you think that forensic investigative methods would minimize corporate fraud?
2. What are the techniques and procedures forensic investigator uses in carrying out his assignment?

Research Hypotheses

1. Ho: There is no significance relationship between the number of staff involved in fraud uncovered and amount lost to fraudsters in banking industry.
2. Ho: There is no significant difference between the forensic investigator techniques and procedures and that of the independent internal and external audits.

Review of Literature

Internal frauds include management and employee frauds. Management fraud comprise all frauds committed by the top levels of management, and covering not only the direct misappropriation of funds but also the manipulation of accounts of the entity, This type of fraud enables top management retain their jobs and favourable rating with shareholders, creditors, security market operatives, and so on. This kind of fraud is most difficult to detect because they always involve executive overriding of internal controls of the firm.

Employee Fraud is fraud committed by all other employees apart from top management, and is often more easily dealt with by the common types of control in the organization. This type of fraud is simple to commit when there is a lack of proper controls over procedures. Whereas management fraud can be dealt with by outside bodies such as Audit Committees, employee frauds are usually dealt with by internal management of the firm; External frauds are external to the firm, covering areas such as investment and pension funds, money laundering and transnational frauds.

Mahdi and Zhila (2008) define fraud as the intentional misrepresentation, concealment or omission of the truth for the purpose of deception or manipulation to the financial detriment of an individual or an organization such as a bank, which also includes embezzlement, theft or any attempt to steal or unlawfully obtain or misuse the asset of the bank. Fraud can increase the operating cost of a bank because of the added cost of installing the necessary machinery for its provision, detection and protection of assets. Fraud is perpetrated in many forms and usually has insiders (staff) and outsiders conniving together to successfully implement the act.

Concept of Forensic Accounting

Forensic Accounting is the specialty practice area of accountancy that 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. Forensic Accountants, also refer to as forensic auditors or investigative auditors, often have to give expert evidence at the eventual trial. 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. They are of the opinion that forensic accounting, also called investigative accounting or fraud audit, is a merger of forensic science and accounting.

Forensic investigative accounting demands reporting, where accountability of the fraud is established and the report is considered as evidence in the court of law or in administrative proceedings. Using forensic accounting techniques will help in exposing and identifying the culprits, because this accounting presents the process of interpreting, summarizing and providing complicated financial issues clearly i.e. using the accounting literature to help draw facts in the litigation. Generally the intent is what separates error from fraud and forensic investigator prove intent with help of circumstantial evidence such as; motive, opportunity, repetitive acts, witness statement, concealment, victim reliance and damages.

Expert evidence provided by forensic investigator is often the most important component of many civil and criminal cases today. A qualified expert may testify in the form of an opinion or otherwise, so long as:

- a. The testimony is based upon sufficient facts or data.
 - b. The testimony is the product of reliable principles and methods and
 - c. The witness has applied the principles and methods reliably to the facts of the case.
- Experts can testify in any case in which their expertise is relevant, criminal cases are more likely to use forensic scientists or forensic psychologists, whereas civil cases, such as personal injury, may use forensic engineers, forensic accountants, employment consultants or care experts .

The experts also trace assets on behalf of regulators or prosecuting authorities where civil recovery is one of the remedies; analyse the flow of funds in instances of money laundering, distinguishing between criminal and legitimate funds; as well trace and analyse the flow of funds in terrorist investigation. Forensic experts interview possible witnesses for information, or suspects for confessions; investigate allegations of insider trading in contravention of the applicable market laws, as well as contraventions of legislations. They also investigate specialized matters such as insolvency, insurance, healthcare; prevent fraud and devise awareness strategies and investigate cyber crimes.

To be a forensic investigator, the person needs multidisciplinary knowledge of accounting, law, psychology, business, criminology, and information and communication technologies (ICTs); the person must also possess critical thinking ability; systems thinking ability; emotional intelligence; knowledge of fraud schemes; discernment (ability to read character or motives; a searching mind that goes beyond what is obvious or superficial; ability to recognize minute shades of thoughts, motives, etc); expert witnessing skills, among others (Adepate, 2010).

Forensic Investigative Methods

Forensic investigations are planned to cover only a selected sample or offices based on an analytical review of accounts and results of past audits instead of a blanket coverage of all spending offices. Unless otherwise stipulated, audit should concentrate on regularly, probity and compliance issues. Performance related issues could be dealt with in specific performance reviews. The role of the controlling officer, the head of the concerned institution or organization in financial administration are usually specified in the financial

codes, manuals, rules and orders of government. Their initial discharge of such prescribed duties could be examined and the implementation of prescribed controls evaluated.

The advent of large-scale use of computers in processing, not only accounting information, but also several other transactions with direct financial implications possess a challenge to auditing because large volumes are processed in a short time. The proliferation of platforms and software makes it possible to perpetrate frauds in new ways. A thorough knowledge of IT and the engagement of highly skilled professionals is therefore essential if forensic auditing is to have any meaning. A number of techniques are used during computer forensics investigations. They include:

(a) Cross-drive analysis

A forensic technique that correlates information found on multiple hard drives. The process, which is still being researched, can be used for identifying social networks and for performing anomaly detection (Garfinkel, 2006).

(b) Live Analysis

The examination of computer from within the operating system using forensics or existing sysadmin tools to extract evidence. The practice is useful when dealing with encrypting files systems, for example, where the encryption keys may be collected and, in some instances, the logical hard drive volume may be imaged (known as a live acquisition) before the computer is shut down (Maarten, 2010).

(c) Deleted Files

A common technique used in computer forensic is the recovery of deleted files. Modern forensic software has their own tools for recovering or carving out deleted data (Aaron et al, 2009). Most operating systems and file systems do not always delete physical files data, allowing it to be reconstructed from the physical disk sectors. File carving involves searching for known file headers within the disk image and reconstructing deleted materials. It is necessary to provide formal instruction on fraud awareness, investigation and reporting. The planning of overall audit coverage and individual audits on the basis of risk analysis carried in accordance with existing global 'best practice' could be included in the curriculum for all management level. Arguably, forensic auditing without

a thorough knowledge of IT as outlined above would be meaningless, and this would have to be borne in mind while devising curricula.

Frauds Detection Techniques In Forensic Auditing

Forensic investigator uses various approaches in evidence-gathering. The various accounting and audit programs available for the use of the forensic investigator include:

- (i) Net Worth and Expenditure methods
- (ii) Tracing-is an accounting technique which involves the flow of funds.
- (iii) Cheque spreads-This an accounting method that should be used when the subject uses cheques in account operation.
- (iv) Deposit spreads-this deals with the receipts into the chequing account. The use of deposit spread is different from other normal accounting practices.
- (v) Credit card spreads-this is applied if the subject uses credit cards frequently. Some criminals use stolen credit cards to make purchases, which are later fenced.
- (vi) Gross Profit Analysis-this is an accounting method forensic investigator used in cases of money laundering or skimming operations.
- (vii) Bank Deposit method-this method is very useful for a subject who operates only one business and the income seems to come from only one source. Normally the subject's business is a cash type business where receipts are received in cash. When this method is employed, each item of income and expense must be examined as to the source of fund and their subsequent use.
- (viii) Telephone-telephone calls help identify personal contacts and associates of the subject. A data base is usually established to identify telephone contacts.
- (ix) Flowcharts-there are many kinds of flowcharts the forensic accountant or fraud examiner can use. The common ones are; organizational,chronological, matrix and operational.

Methodology

This is a survey design. Questionnaire was the research instrument and it contained both open and close ended questions. Responses from the respondents to five point Likert scale questions and other responses like true or False were received and analysed. The areas covered by this study include issues on fraud and forensic investigation in the banking industry in India. The period of study is ten years from 2007-08 to 2016-17.

The population frame of the study comprises of Bank Managers, Accountants, and Supervisors. The population of study was 220 personnel. This consists of 60 Bank managers, 60 Accountants, 60 Supervisors and 40 Management staff. Stratified random sampling technique was used.

The data collected for the study were analysed using simple regression analysis in testing Hypothesis One and Chi-square test in testing Hypothesis Two. Data relating to research questions were analysed using mean scores from Likert scale. A mean of 3.0 and above indicates positive response ie AGREE. Any statement of mean below 3.0 is negative response i.e. DISAGREE. The hypotheses were tested using Regression Analysis, Chi-square and Z – test. The Null hypotheses were tested at 0.05 (5% level of significance). Data on the number of fraud and forgeries in the Banking industry were analysed using Simple Regression Analysis Method.

Simple Regression

$$Y=a+bX$$

$$a = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n(\sum x^2) - (\sum x)^2}$$
$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

X and Y are the variables,
 b=the slope of the regression line,
 a=the intercept point of the regression
 line and the y axis. n=number of values
 or elements

X =First Score

Y =Second Score

XY =Sum of the product of first and
 second scores

X =Sum of first scores

Y =Sum of second scores

X^2 =Sum of square first scores

Decision rule:

Reject Ho if F-computed > F-tabulated and also reject Ho if P-value is less than 0.05.

Data Presentation And Analysis

Table 1 below gives the total number of fraud cases and total amount involved in the banking industry for the years 2007-08 to 2016-17.

Table 1

FY (Apr-Mar)	Total Fraud Cases	
	No. of Cases	Total Amount
2007-08	21249	1076.54
2008-09	23941	1911.68
2009-10	24791	2037.81
2010-11	19827	3832.08
2011-12	14735	4491.54
2012-13	13293	8646.00
2013-14	12571	10170.00
2014-15	15290	19361.00
2015-16	12124	16003.11
2016-17	10176	16788.53

As shown in table 1, the amount involved in fraud increased steadily over the ten year period except in 2015-16. From Rs.1076.54 crore in 2007-08 to Rs.19361.00 crore in 2014-15 (about 1798% increase) before declining to Rs. 16003.11 crore in 2015-16. Thereafter, it increased to Rs. 16788.53 crore in 2016-17. Total number of fraud cases increased in the years 2008-09 and 2009-10 and decreased continuously from 19827 in 2010-11 to 12571 in 2013-14 before increasing to 15290 in 2014-15. Thereafter, the fraud cases declined in the last two years 2015-16 and 2016-17.

Testing of Hypotheses

Hypothesis One

Ho: There is no significance relationship between the number of staff involved in fraud uncovered and amount lost to fraudsters in banking industry.

The table below shows the F* test on the above hypothesis.

Table 2

Year	No. of fraud cases	Total amount	XY	x^2	y^2
2007-08	21249	1076.54	22,875,398	451,520,001	1,158,938
2008-09	23941	1911.68	45,767,530	573,171,481	3,654,520
2009-10	24791	2037.81	50,519,347	614,593,681	4,152,669
2010-11	19827	3832.08	75,978,650	393,109,929	14,684,837
2011-12	14735	4491.54	66,182,841	217,120,225	20,173,931
2012-13	13293	8646.00	114,931,278	176,703,849	74,753,316
2013-14	12571	10170.00	127,847,070	158,030,041	103,428,900
2014-15	15290	19361.00	296,029,690	233,784,100	374,852,580
2015-16	12124	16003.11	194,021,705	146,991,376	256,099,529
2016-17	10176	16788.53	170,840,081	103,550,976	281,854,739

Table 3 The ANOVA Table for Regression using table 2 above.

Source of Variation	SS	Df	F*	F-tabulated
Regression	-112,745,959	1	-4.44	5.32
Error	46,115,040	-4.44		
Total	343,369,081	-3.44		

Simple regression analysis was used to test the hypothesis.

Decision Rule: Since F^* calculated value of $-4.44 < F$ – tabulated value of 5.32 at 5% significant level, the null hypothesis is accepted and the alternate hypothesis is rejected. This shows that there is no strong relationship between number of fraud cases and amount involved in fraud in the banking industry.

Hypothesis Two

Ho: There is no significance difference between the forensic investigator techniques and procedures and that of the independent internal and external audits.

Analysis of responses from question three revealed that there is significant difference between the forensic investigator techniques and procedures and that of the independent internal and external audits. This supports the alternate hypothesis. At 0.05 level of significance, the calculated Chi-square was 0.035 (See table 5 below).

Table 4 Responses From Question Three:

Do you agree that there is significant difference between forensic investigation techniques and procedures and that of the independent internal and external audits.

Question	Options	Respondents(A)	Respondents(B)	Total
Three	True	150	26	176
	False	37	7	44
	Total	187	33	220

Table 5 Chi-Square Computation

S/N	O	E	O-E	(O-E) ²	(O-E) ² /E
1	150	149.6	0.4	0.16	0.16/149.6=.001
2	37	37.4	-0.4	0.16	0.16/37.4=.004
3	26	26.4	-0.4	0.16	0.16/26.4=.006
4	7	6.6	0.4	0.16	0.16/6.6=.024
Total			$\sum D=0$		=.035

Decision Rule: Reject null hypothesis if P-value is less than 0.05.

Findings

(1) Forensic investigative skills are required to uncover and establish the occurrence of financial crimes. The result of test on Hypothesis One revealed that there is no significant relationship between number of fraud cases and amount involved or lost to fraudsters in Indian banks.

(2) Economic crimes have become so rampant and sophisticated that prevention and detection now require special investigative skills which are currently not available. Analysis of responses from question three and Chi-square test on Hypothesis Two revealed that there is significant difference between the forensic investigator techniques and procedures and that of independent internal and external audits.

Conclusion

Corporate fraud in India has affected the growth and development of the economy in the past decades. In the banking industry, various measures have been adopted to minimize fraud perpetration without success, despite reforms in the sector and prudential guidelines stipulated by the Banking Act.

In view of this development, investigative skills of forensic expert are very much needed to checkmate the activities of fraudsters in our society.

Recommendations

The researcher is disposed to make the following recommendations based on the findings and conclusion.

1. It is recommended that government and institution of higher learning should intensify effort in providing enabling environment for the training of forensic accountants. At the moment, there is acute shortage of forensic experts in India, in most cases, such experts' services are acquired at very exorbitant fee.

2. It is recommended that the banks should be made to render returns on frauds and forgeries as and when due.
3. It is recommended that forensic investigative methods should be included in our professional literature vide International Financial Reporting Standards (IFRSs).
4. The researcher is of the opinion that internal control measures should be strengthened by the banks and government agencies in order to prevent and detect fraud in the system. Those fraud perpetrators should be prosecuted with the help of forensic expert services and adequate punishment meted to serve as deterrent.

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