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Research Paper

PREVENTION OF CORPORATE FRAUDS THROUGH FORENSIC ACCOUNTING: A STRATEGIC ANALYSIS

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ABSTRACT

The high profile corporate frauds reported over the past couple of decades have put the stakeholder' confidence at bay. Investors have lost their investments entirely or substantially, and the stock market(s) not being immuned from the adverse effects of such frauds have also reacted sharply , at least in the short run, affecting thereby the vibrancy of the capital market in one hand and the economic progress of the country on the other hand. Prevention of corporate frauds has therefore become a necessity of the first order today to ensure that the country's economic progress is not derailed and the stakeholders' confidence is regained. And for prevention of corporate frauds, Forensic Accounting holds the key. This paper highlights the concepts and techniques of Forensic Accounting', based on extensive review of literature, so as to generate interests in the minds of the learners and practitioners to appreciate forensic accounting as an emerging concept and a distinct field of study that can be put to effective use, through a strategic move, in every progressive organization, however profit or nonprofit seeking it may be, to detect as well as prevent frauds.

KEY WORDS: *Forensic Accounting, Benford's Law, Beneish Model, relative size factor, Computer Assisted Auditing Tools, Data mining, Strategy*

INTRODUCTION

The corporate world has experienced a series of high profile frauds over the past couple of decades. These frauds, mostly in the form of accounting figures, have put the stakeholder' confidence at bay; besides causing them lose their investments entirely or substantially. The stock market has never remained immune from the adverse effects of such frauds either, at least in the short run. The wrong accounting practices and improper disclosures made by Enron Corporation, for instance, resulted in bringing its stock price down from USD 90 to as low as USD 1 per share, with the net outcome being its investors losing a whopping USD 11 billion, and the corporation in itself with assets over USD 63.4 billion virtually getting collapsed. The WorldCom's admission of capitalizing its revenue expenses to inflate profits resulted too in bringing its stock price down from $150 billion to as low as $150 million. The 'Satyam' scam in the Indian IT industry, with falsified revenues, inflated operating profits and the resultant margins and cash balances not being backed by ethical and sound accounting practices, shattered the confidence of millions of stakeholders across nations in the year 2009. Whereas, the list of such frauds continues to grow even today, both in terms of their nature and magnitude cutting across economy, regions or nations, a questions comes if forensic accounting could be used as a strategic tool for prevention of such frauds. It is against this backdrop that this paper examines the strategic dimensions of forensic accounting which when used can effectively prevent corporate frauds. The paper also highlights the concept, evolution, and different techniques of forensic accounting that are in vogue.

OBJECTIVES

The broad objective of this paper is to examine if and how forensic accounting can be used as a strategic tool for prevention of corporate frauds. The paper specifically aims at highlighting the concept, benefits, and different techniques of forensic accounting that are in vogue, along with a proposed strategy to make forensic accounting more effective in both detecting and preventing corporate frauds vis-à-vis generating interests in the minds of the learners and practitioners to appreciate forensic accounting as an emerging concept and a distinct field of study that holds the key to building stakeholders' confidence and ultimate corporate success.

METHODOLOGY

The study is primarily a literature based study, with limited use of secondary data, and with more emphasis on popularizing the concept and building a proposition to

use forensic accounting as a strategic tool for corporate fraud prevention.

FORENSIC ACCOUNTING: CONCEPTUAL FRAMEWORK

Whereas, Website's Dictionary defines 'forensic' as "belonging to, used in, or suitable to courts of judicature or to public discussions and debate," 'Forensic Accounting' has been viewed differently by different authority and standard setting and/or policy making bodies. Some of these views are quoted as under:

"Forensic accounting is the application of accounting principles, theories and discipline to facts or hypothesis at issues in a legal dispute and includes every branch of accounting knowledge" (AICPA). "Forensic accounting is the action of identifying, recording, settling, extracting, sorting, reporting and verifying past financial data or other accounting activities for settling current or prospective legal disputes or using such past financial data for projecting potential financial data to settle legal disputes", (Crumbley, et. al.2009)."Forensic accounting involves a financial detective with an apprehensive mind, a financial bloodhound, someone with a 'sixth sense' that enables reconstruction of past accounting transactions and an individual who looks beyond the numbers", (Mehta and Mathur,2007).

Forensic accounting is "the application of financial skills, and an investigative mentality to unresolved issues, conducted within the context of rules and evidence. As a discipline, it encompasses financial expertise, fraud knowledge and a sound knowledge and understanding of business reality and the working of the legal system", (Bologna and Lindquist, 1995).

It is "The science that deals with the relation and application of finance, accounting, tax and auditing knowledge to analyze, investigate, inquire, test and examine matters in civil law, criminal law and jurisprudence in an attempt to obtain the truth from which to render an expert opinion", Horty (www.horty.com).

Forensic accounting, also called as investigative accounting, refers to the application of an expert knowledge and specific skills to spot transactions which are not authentic and gather the evidence regarding the same. It is used for fraud examination, where fraud examination covers fraud allegations from inception to disposition, including obtaining evidence, interviewing, reporting and testifying. Forensic accounting is the practice of utilizing accounting, auditing and investigative skills to assist in legal matters.

The Association of Certified Fraud Examiners (ACFE) has defined forensic accounting as fraud examination which incorporates all the terms involved with investigation, including fraud auditing. Forensic accounting is "the application of financial accounting and investigative skills to a standard acceptable by the courts to address issues in dispute in the context of civil and criminal litigation", (Manning, 2002).

Bhasin (2007) has made forensic accounting a more broad based having stated that 'the objectives of forensic accounting shall be to (i) evaluate the damages caused due to negligence of auditor(s), (ii) find out whether embezzlement of cash has taken place and the amount so involved, (iii) suggest if any criminal proceedings are to be drawn, (iv) collect and compile the associated evidence; and even (v) calculate the value of assets in a divorce proceedings. He holds the opinion that the primary direction of forensic accounting is 'explanatory analysis' to establish the cause and effect of a phenomenon, including discovery of deception, if any.

A close scrutiny of the above observations thus leads to define Forensic Accounting as that branch of accounting which takes a comprehensive view of fraud investigation through audit and examinations of the books of accounts, other related records and statements, interviews and cross examinations of concerned parties, for proving (or disproving) an alleged fraud and serving as an expert witness in the court of law whenever needed, to facilitate and provide a basis for discussion, debate and resolution of the dispute(s).

TECHNIQUES OF FORENSIC ACCOUNTING

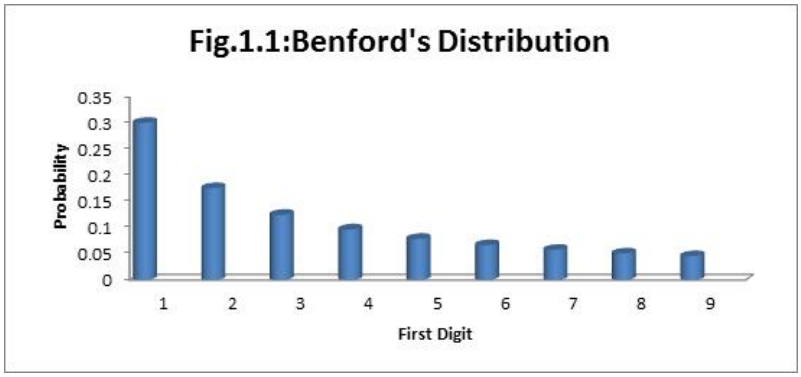
The established and known techniques used in Forensic Accounting for fraud detection and examination are: (i)Benford's Law, (ii) Theory of relative size factor (RSF), (iii) Computer Assisted Auditing Tools (CAATs), (iv) Data Mining Techniques, and (v) Ratio Analysis. Each of these techniques has been discussed in brief as under:

(i) Benford's Law: Benford's law, also called Newcomb-**Benford's law** and first-digit **law**, propagated by Frank Benford, is an observation about the frequency distribution of leading digits in many real-life sets of numerical data. The **law** states that in many naturally occurring collections of numbers, the leading significant digit is likely to be small. Benford's law can often be used as an indicator of fraudulent data, and can assist in auditing the accounting data. Benford's distribution is non-uniform, with smaller digits being more likely to occur than the larger digits. Fig.1.1 depicts the Benford's distribution pattern which is based on the values obtained by applying the formula:

$$P(d) = log_{10}(d+1) - log_{10}(d) = log_{10}(1+\frac{1}{d})$$

The essence of this Benford's distribution is that figures beginning with smaller digit such as '1' occurs more frequently, for example, 30 times more than figures beginning with larger digit such as '9'. Benford's law usually holds good for data with the following characteristics:

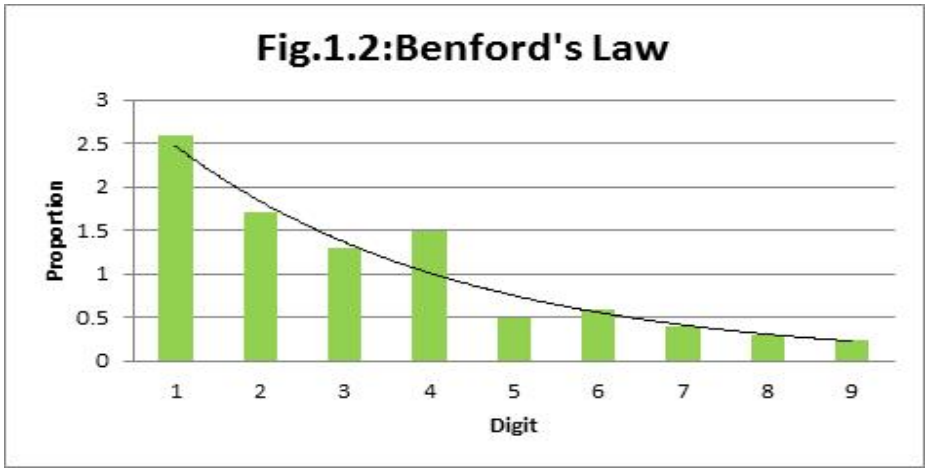
- Data with values that are formed through a mathematical combination of numbers from several distributions.
- Data that has a wide variety in the number of figures e.g. data with plenty of values in the hundreds, thousands, tens of thousands etc.
- The data set is fairly large.
- The data is right skewed i.e. the mean is greater than the median, and the distribution has a long right-tail rather than being symmetric.
- The data has no predefined maximum or minum value (with the exception of a zero minimum).



Source: www.statisticalconsultants.co.nz (Modified)

Data in accounting conforming to the above characteristics are very common, hence Benford's distribution has become handy for fraud detection. Accounting figures beginning with first digit more frequently than the Benford's distribution pattern will draw the attention of the investigator for a closer look and scrutiny, thus helping in detecting the fraud.

Fig 1.2 illustrates the concept further. Assume that an accountant has the authority to make payments to parties with claims below Rs5, 00,000, and for all payments of value Rs 5, 00,000 and above must have the approval of the next higher authority. Now assuming further that Fig.1.2 has been constructed based on actual data, it can be seen that payments just below Rs 5,00,000 have been made more frequently than Rs 5,00,000 and above, apparently to defy the spirit of the threshold limit, since '4' is aberrantly high in occurrence, and '5' is low. This is an indication of the possible manipulation of the natural occurrence of payments beginning with '5', and instead, 5 being switched to be kept just below the cut off limit, and/or an indication that the account could be making a lot of payments fraudulently keeping the value or limiting the value to (say) Rs 4, 99,999 or alike to embezzle the organizational funds.



(ii) Theory of relative size factor (RSF)

The theory of relative size factor (or RSF) when applied to accounting figures has produced credible results in detecting errors as well as frauds. RSF is a test that (i) compares the top two amounts for each subset of accounting data by calculating the ratio between the largest amount in the subset / Second largest amount in the subset, i.e, RSF= Largest record in the subset / Second largest record in the subset, and (ii) identifies the subsets where the largest amount is out of line with other amounts for that subset. Useful for analysing data relating to inventory, payroll, accounts receivable and sales of the firm, the RSF helps detecting any unusual deviations from the normal range of limits fixed for the subset. For example, a high RSF in payroll data may indicate towards an overtime error and a high RSF for inventories may indicate towards a calculation or counting error. Further, possibility of an error or fraud is very high where RSF is greater than 10.

(iii)Computer Assisted Auditing Tools (CAATs)

CAATs provide the auditors with tools that are useful to identifying unexpected or unexplained patterns in data, indicating the possibility of a fraud being committed. CAATs are automated computer programs that an auditor uses as a part of the audit procedures to process data that hold significance to the audit. CAATs are especially useful in environments characterized by (i) high volumes of transactions, (ii) complex processes, (iii) distributed operations, and (iv) unrelated applications and systems. By using CAATs, firms gain assurance about the accuracy of transactional data, and the extent to which business transactions adhere to controls and comply with policies; and further that a cconsistent use of automated transaction analysis and continuous monitoring, CAATs enable real-time independent testing and validation of critical enterprise data.

(iv)Data Mining Techniques

Data mining is an analysis process used by forensic accountants and internal auditors to examine data sets or metadata to identify patterns, anomalies, and trends to answer business queries and provide predictive value for future events. Data mining software incorporates algorithms to explore, analyze, classify, relate, and partition data sets that are then used to develop different models to achieve the business objective. The firm may develop several models using different algorithms – including a predictive model, a classification model, and an exploration model – to identify the types of transactions, vendors, or personnel likely to be associated with 'purchase related fraud'.

Data mining techniques have become a great help and useful assistance in the process of detecting accounting frauds, especially when dealing with voluminous and complex financial data is a challenge for the forensic accounting. The collapse of high profile companies in the recent past owing to poor corporate governance, improper reporting and disclosures, unethical corporate practices, and credibility of some of the leading audit firms in question, have all paved the way for the extensive use of CAATs.

(v) Ratio Analysis

Ratio analysis can help detecting financial frauds in the form of, among others, (i) fictitious sales, (ii) improper expense recognition, (iii) incorrect asset valuation, (iv) hidden liabilities and (v) unsuitable disclosures. For example, comparative ratio analysis can help the analysts and auditors to spot discrepancies within the firm's financial statements. By analyzing ratios, information regarding day's sales in receivables, leverage multiples and other vital metrics can be determined and analyzed for detecting inconsistencies. A mathematical model, called the Beneish Model that integrates eight financial ratios into one, known as the M score can be used to determine the likelihood of earnings manipulation, with M score greater than -2.22 warranting for an investigation of the firm's earnings.

The M Score is equal to the **sum total** of the firm's '*Days Sales in Receivables Index (DSRI), Gross Margin Index (GMI), Asset Quality Index (AQI), Sales Growth Index (SGI), Depreciation Index (DEPI), Sales General and Administrative Expenses Index (SGAI), Leverage Index (LVGI), and Total Accruals to Total Assets (TATA)*', where

(i) $DSRI = (\text{Net Receivables}_t / \text{Sales}_t) / (\text{Net Receivables}_{t-1} / \text{Sales}_{t-1})$

(ii) $GMI = [(\text{Sales}_{t-1} - \text{COGS}_{t-1}) / \text{Sales}_{t-1}] / [(\text{Sales}_t - \text{COGS}_t) / \text{Sales}_t]$

(iii) $AQI = [1 - (\text{Current Assets}_t + PP\&E_t + \text{Securities}_t) / \text{Total Assets}_t] / [1 - ((\text{Current Assets}_{t-1} + PP\&E_{t-1} + \text{Securities}_{t-1}) / \text{Total Assets}_{t-1})]$, (Note: PP&E= Plant, Property and Equipment)

(iv) $SGI = \text{Sales}_t / \text{Sales}_{t-1}$

(v) $DEPI = (\text{Depreciation}_{t-1} / (PP\&E_{t-1} + \text{Depreciation}_{t-1})) / (\text{Depreciation}_t / (PP\&E_t + \text{Depreciation}_t))$

(vi) $SGAI = (\text{SG\&A Expense}_t / \text{Sales}_t) / (\text{SG\&A Expense}_{t-1} / \text{Sales}_{t-1})$

(vii) $LVGI = [(\text{Current Liabilities}_t + \text{Total Long Term Debt}_t) / \text{Total Assets}_t] / [(\text{Current Liabilities}_{t-1} + \text{Total Long Term Debt}_{t-1}) / \text{Total Assets}_{t-1}]$, and

(viii) $TATA = (\text{Income from Continuing Operations}_t - \text{Cash Flows from Operations}_t) / \text{Total Assets}_t$

Strategizing Forensic accounting to rein over corporate frauds:

Corporate frauds and the corresponding menace can be arrested by putting in place an effective forensic accounting system. This can be done by using the following five prong strategic actions:

1. Organizations to accept and integrate forensic accounting into their system and culture for increased transparency of their operations and enhanced performance.
2. Professional standard setting bodies to make forensic accounting an integral and essential part of the accounting profession thereby issuing appropriate stand(s) and guidelines.
3. Regulatory and policy formulating bodies to make forensic accounting mandatory for every organization to observe and comply with.
4. Top management to lead from the front to enable forensic accounting deliver its stated objectives.
5. Accounting curricula to integrate forensic accounting into the accounting teaching and learning process in a graded manner, and at the undergraduate and post graduate and professional levels, by making it a separate and distinct course. This will add to creating the right kind of professionals having adequate exposure to understanding how accounting frauds are being committed, detecting them early, tracing them to their source(s), and suggesting corrective as well as preventing measures within the framework of law.

The action and strategy mentioned in the aforesaid paragraphs has also been depicted in Fig.1.1

BENEFITS OF FORENSIC ACCOUNTING

Forensic Accounting holds the following benefits to the stakeholders at large:

1. Prevention of fraud and malpractices.
2. Better corporate performance.
3. Protection of shareholders' interest.
4. Protection of interests of all other stakeholders.
5. Increased value (valuation) of the enterprise.
6. Compliance to laws and regulations.
7. Enhanced managerial efficiency.
8. Creation and enhancement of a strong competitive image.

CONCLUSION

The high profile corporate frauds reported over the past couple of decades have put the stakeholder' confidence at bay. Prevention of corporate frauds has therefore become an absolute necessity to not only restore the confidence of stakeholders at large but also to aid to the country's overall economic progress. The prevention of corporate frauds is possible through, among others, an effective, efficient and strategic use of Forensic Accounting in the whole organization, however profit or nonprofit seeking it may be. Imbibing Forensic Accounting into the organizational culture itself, led by top management from the front along with active support of the regulatory and/or policy formulating bodies and professional standard setting organizations, vis-à-vis integration of Forensic Accounting into the academic curricula as a distinct field of study, and action alike, will go a long way to make Forensic Accounting an integral part of the organizational system that is both inbuilt and robust to prevent corporate frauds.

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